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### SEARCH REQUEST FORM

#### Scientific and Technical Information Center

*please note that the limitations of chargeable and dischargeable in the claims are not significant and should not be used to limit search. Thank you*

Requester's Full Name: Susy Tsang-Foster Examiner #: 76063 Date: 12/3/02  
Art Unit: 1745 Phone Number 305-0588 Serial Number: 09/762,220  
Mail Box and Bldg/Room Location: CP3 8A09 Results Format Preferred (circle): PAPER DISK E-MAIL

**If more than one search is submitted, please prioritize searches in order of need.**  
\*\*\*\*\*

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Non-aqueous electrolyte secondary cell and method for manufacturing the same

Inventors (please provide full names): Please see attached list

Earliest Priority Filing Date: 6/4/1999

*\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

*Please search for a non-aqueous electrolyte secondary battery [overlap of claims 1 and 8 attached where claim 8 does not require that a lithium salt be present in the electrolyte] where the battery comprises a chargeable and dischargeable positive electrode, a non-aqueous electrolyte, and a chargeable and dischargeable negative electrode wherein at least one of the positive electrode, the nonaqueous electrolyte and the negative electrode contains at least one of the following selected from a phosphate with formula (1), a phosphate with formula (2) and a phosphate with formula (3). Please see claims 1 and 8. Please also search for claim 3 which states that at least one of the positive electrode, negative electrode, and nonaqueous electrolyte contains a mixture of at least two selected from general formula (1), general formula (2), and general formula (3) where R<sup>1a</sup>, R<sup>2a</sup> and R<sup>3a</sup>, R<sup>1b</sup>, R<sup>2b</sup> and R<sup>1c</sup> have same # carbon atoms.*

STAFF USE ONLY	Type of Search	Vendors and cost where applicable
Searcher: <u>EA</u>	NA Sequence (#) _____	STN <u>\$ 337.75</u>
Searcher Phone #: _____	AA Sequence (#) _____	Diabg _____
Searcher Location: _____	Structure (#) <u>(6) (subsets)</u>	Quest/Orbit _____
Date Searcher Picked Up: _____	Bibliographic <u>(and)</u>	DLink _____
Date Completed: <u>12-10-02</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: <u>10</u>	Fulltext _____	Sequence Systems _____
Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____
Online Time: <u>95</u>	Other _____	Other (specify) _____

=> file reg

FILE 'REGISTRY' ENTERED AT 13:45:12 ON 10 DEC 2002  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
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STRUCTURE FILE UPDATES: 9 DEC 2002 HIGHEST RN 475556-62-8  
DICTIONARY FILE UPDATES: 9 DEC 2002 HIGHEST RN 475556-62-8

TSCA INFORMATION NOW CURRENT THROUGH MAY 20, 2002

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP PROPERTIES for more information. See STNote 27, Searching Properties in the CAS Registry File, for complete details:

<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=> d his

(FILE 'HOME' ENTERED AT 12:08:54 ON 10 DEC 2002)

L1 FILE 'LREGISTRY' ENTERED AT 12:09:28 ON 10 DEC 2002  
STR

L2 FILE 'REGISTRY' ENTERED AT 12:28:25 ON 10 DEC 2002  
0 S L1

L3 FILE 'LREGISTRY' ENTERED AT 12:29:03 ON 10 DEC 2002  
STR L1

L4 FILE 'REGISTRY' ENTERED AT 12:32:09 ON 10 DEC 2002  
0 S L3  
L5 STR L3  
L6 22 S L5

L7 FILE 'LREGISTRY' ENTERED AT 12:39:34 ON 10 DEC 2002  
STR L5

L8 FILE 'REGISTRY' ENTERED AT 12:42:51 ON 10 DEC 2002  
21 S L7  
L9 SCR 2043  
L10 17 S L7 NOT L9  
L11 3224 S L7 NOT L9 FUL  
SAV L11 TSA220/A

FILE 'HCA' ENTERED AT 12:49:11 ON 10 DEC 2002

L12 175344 S BATTERY OR BATTERIES OR (ELECTROCHEM? OR ELECTROLY? OR  
L13 392546 S ELECTROLY?  
L14 38692 S NONAQ# OR NONAQUEOUS? OR NONH2O OR NONWATER? OR NON(A) (  
L15 QUE (52 OR 72)/SX,SC  
L16 12316 S L11  
L17 89 S L16 AND L12  
L18 8298 S (L12 OR L15) AND L13 AND L14  
L19 12 S L18 AND L16

FILE 'LREGISTRY' ENTERED AT 13:00:22 ON 10 DEC 2002

L20 STR L7

FILE 'REGISTRY' ENTERED AT 13:02:21 ON 10 DEC 2002

L21 2 S L20 SSS SAM SUB=L11  
L22 79 S L20 SSS FUL SUB=L11  
SAV L22 TSA220A/A

FILE 'LREGISTRY' ENTERED AT 13:04:49 ON 10 DEC 2002

L23 STR L7

FILE 'REGISTRY' ENTERED AT 13:07:48 ON 10 DEC 2002

L24 50 S L23 SSS SAM SUB=L11  
L25 2029 S L23 SSS FUL SUB=L11  
SAV L25 TSA220C/A

FILE 'LREGISTRY' ENTERED AT 13:10:13 ON 10 DEC 2002

L26 STR L7

FILE 'REGISTRY' ENTERED AT 13:12:55 ON 10 DEC 2002

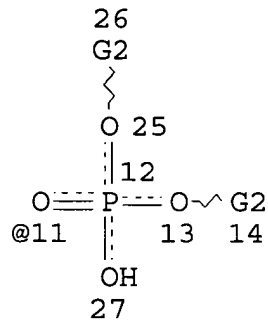
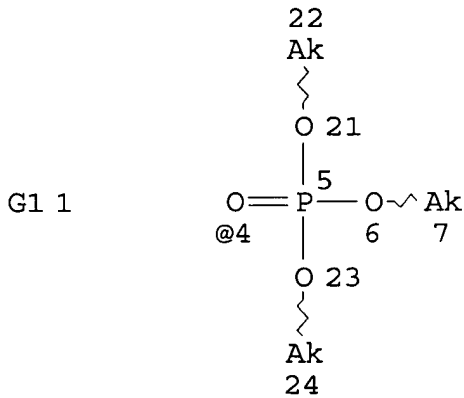
L27 50 S L26 SSS SAM SUB=L11  
L28 1134 S L26 SSS FUL SUB=L11  
SAV L28 TSA220D/A

FILE 'HCA' ENTERED AT 13:16:52 ON 10 DEC 2002

L29 1352 S L22  
L30 8770 S L25  
L31 3681 S L28  
L32 90 S L29 AND (L12 OR L13 OR L14 OR L15)  
L33 138 S L29 AND L30  
L34 72 S L29 AND L31  
L35 1325 S L30 AND L31  
L36 12 S L33 AND (L12 OR L13 OR L14 OR L15)  
L37 7 S L34 AND (L12 OR L13 OR L14 OR L15)  
L38 64 S L35 AND (L12 OR L13 OR L14 OR L15)  
L39 6 S L35 AND (L12 OR L13 OR L15) AND L14  
L40 8 S L19 NOT (L36 OR L37 OR L39)

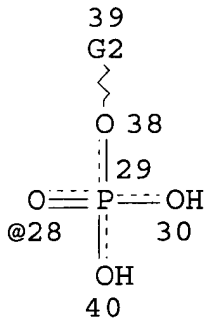
FILE 'REGISTRY' ENTERED AT 13:45:12 ON 10 DEC 2002

=> d l22 que stat  
L7 STR



Ak @17 Cb @19

Page 1-A



Page 1-B

VAR G1=4/11/28

VAR G2=17/19

NODE ATTRIBUTES:

CONNECT IS E1 RC AT 7  
 CONNECT IS E1 RC AT 17  
 CONNECT IS E1 RC AT 19  
 CONNECT IS E1 RC AT 22  
 CONNECT IS E1 RC AT 24

DEFAULT MLEVEL IS ATOM

GGCAT IS SAT AT 7  
 GGCAT IS SAT AT 17  
 GGCAT IS UNS AT 19  
 GGCAT IS SAT AT 22  
 GGCAT IS SAT AT 24

DEFAULT ECLEVEL IS LIMITED

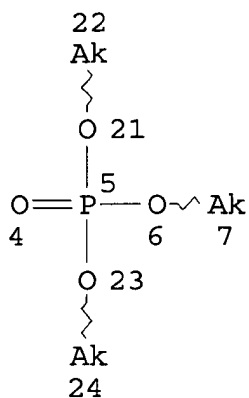
ECOUNT IS M7-X12 C AT 7  
 ECOUNT IS M1-X12 C AT 17  
 ECOUNT IS M7-X12 C AT 22  
 ECOUNT IS M7-X12 C AT 24

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 24

STEREO ATTRIBUTES: NONE

L9 SCR 2043  
 L11 3224 SEA FILE=REGISTRY SSS FUL L7 NOT L9  
 L20 STR



NODE ATTRIBUTES:

CONNECT IS E1 RC AT 7  
 CONNECT IS E1 RC AT 22  
 CONNECT IS E1 RC AT 24  
 DEFAULT MLEVEL IS ATOM  
 GGCAT IS SAT AT 7  
 GGCAT IS SAT AT 22  
 GGCAT IS SAT AT 24  
 DEFAULT ECLEVEL IS LIMITED  
 ECOUNT IS M7-X12 C AT 7  
 ECOUNT IS M7-X12 C AT 22  
 ECOUNT IS M7-X12 C AT 24

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 8

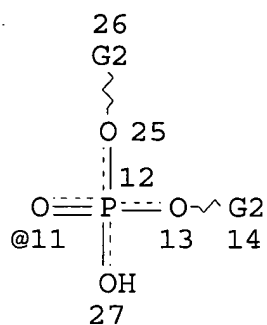
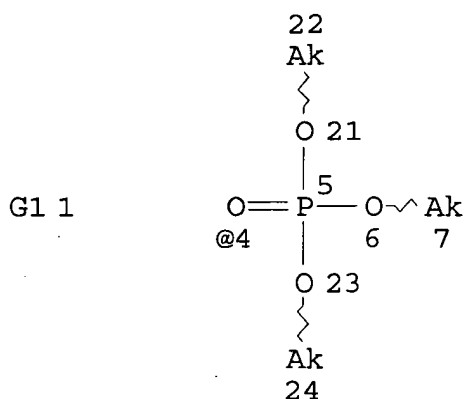
STEREO ATTRIBUTES: NONE

L22 79 SEA FILE=REGISTRY SUB=L11 SSS FUL L20

100.0% PROCESSED 139 ITERATIONS  
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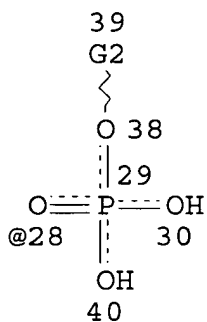
79 ANSWERS

=> d 125 que stat  
 L7 STR



Ak @17 Cb @19

Page 1-A



Page 1-B

VAR G1=4/11/28

VAR G2=17/19

NODE ATTRIBUTES:

```

CONNECT IS E1 RC AT 7
CONNECT IS E1 RC AT 17
CONNECT IS E1 RC AT 19
CONNECT IS E1 RC AT 22
CONNECT IS E1 RC AT 24
  
```

DEFAULT MLEVEL IS ATOM

```

GGCAT IS SAT AT 7
GGCAT IS SAT AT 17
GGCAT IS UNS AT 19
GGCAT IS SAT AT 22
GGCAT IS SAT AT 24
  
```

DEFAULT ECLEVEL IS LIMITED

```

ECOUNT IS M7-X12 C AT 7
ECOUNT IS M1-X12 C AT 17
ECOUNT IS M7-X12 C AT 22
ECOUNT IS M7-X12 C AT 24
  
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GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

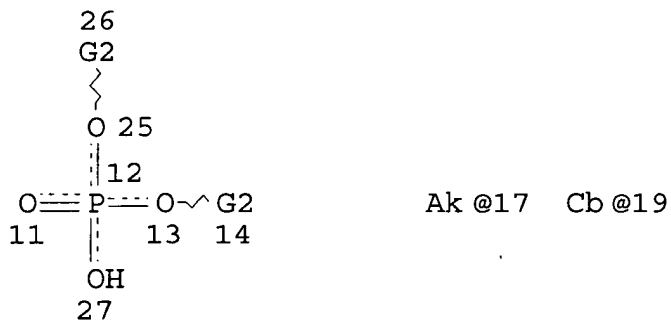
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STEREO ATTRIBUTES: NONE

L9 SCR 2043

L11 3224 SEA FILE=REGISTRY SSS FUL L7 NOT L9

L23 STR



VAR G2=17/19

NODE ATTRIBUTES:

CONNECT IS E1 RC AT 17

CONNECT IS E1 RC AT 19

DEFAULT MLEVEL IS ATOM

GGCAT IS SAT AT 17

GGCAT IS UNS AT 19

DEFAULT ECLEVEL IS LIMITED

ECOUNT IS M1-X12 C AT 17

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 9

STEREO ATTRIBUTES: NONE

L25 2029 SEA FILE=REGISTRY SUB=L11 SSS FUL L23

100.0% PROCESSED 3224 ITERATIONS

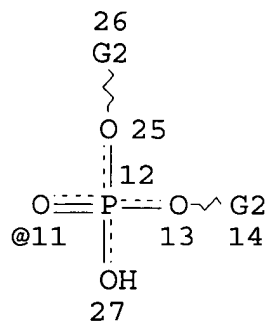
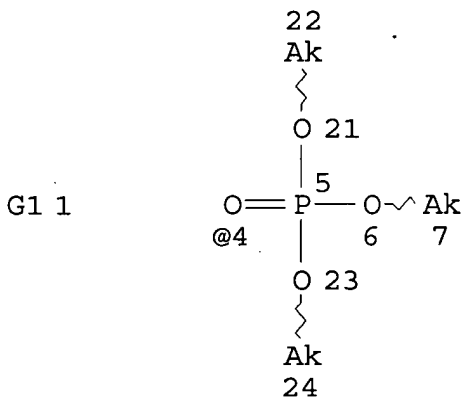
2029 ANSWERS

SEARCH TIME: 00.00.01

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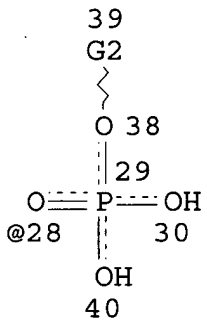
L7 STR





Ak @17 Cb @19

Page 1-A



Page 1-B

VAR G1=4/11/28

VAR G2=17/19

NODE ATTRIBUTES:

CONNECT IS E1 RC AT 7

CONNECT IS E1 RC AT 17

CONNECT IS E1 RC AT 19

CONNECT IS E1 RC AT 22

CONNECT IS E1 RC AT 24

DEFAULT MLEVEL IS ATOM

GGCAT IS SAT AT 7

GGCAT IS SAT AT 17

GGCAT IS UNS AT 19

GGCAT IS SAT AT 22

GGCAT IS SAT AT 24

DEFAULT ECLEVEL IS LIMITED

ECOUNT IS M7-X12 C AT 7

ECOUNT IS M1-X12 C AT 17

ECOUNT IS M7-X12 C AT 22

ECOUNT IS M7-X12 C AT 24

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

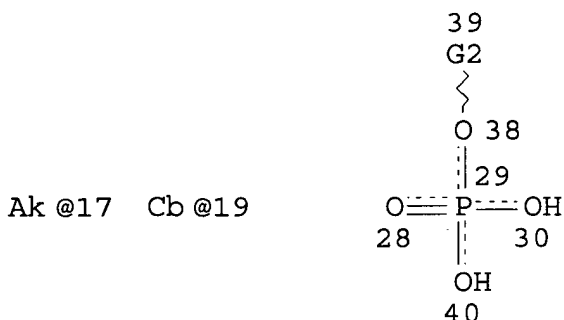
NUMBER OF NODES IS 24

STEREO ATTRIBUTES: NONE

L9 SCR 2043

L11 3224 SEA FILE=REGISTRY SSS FUL L7 NOT L9

L26 STR



VAR G2=17/19

NODE ATTRIBUTES:

CONNECT IS E1 RC AT 17

CONNECT IS E1 RC AT 19

DEFAULT MLEVEL IS ATOM

GGCAT IS SAT AT 17

GGCAT IS UNS AT 19

DEFAULT ECLEVEL IS LIMITED

ECOUNT IS M1-X12 C AT 17

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 8

STEREO ATTRIBUTES: NONE

L28 1134 SEA FILE=REGISTRY SUB=L11 SSS FUL L26

100.0% PROCESSED 3224 ITERATIONS

1134 ANSWERS

SEARCH TIME: 00.00.01

=> file hca

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FILE COVERS 1907 - 5 Dec 2002 VOL 137 ISS 24  
FILE LAST UPDATED: 5 Dec 2002 (20021205/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

CAS roles have been modified effective December 16, 2001. Please check your SDI profiles to see if they need to be revised. For information on CAS roles, enter HELP ROLES at an arrow prompt or use the CAS Roles thesaurus (/RL field) in this file.

=> d l40 1-8 cbib abs hitstr hitind

L40 ANSWER 1 OF 8 HCA COPYRIGHT 2002 ACS

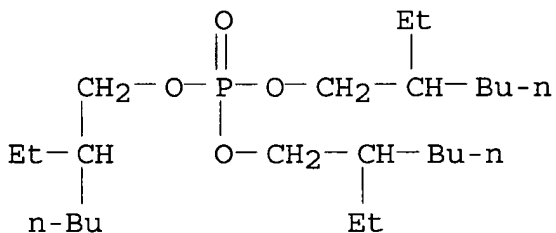
137:250247 Secondary **nonaqueous battery**. Nishihara, Shoji; Kishi, Fumihiko; Miyata, Kazushi (Hitachi Maxell Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002270184 A2 20020920, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-72900 20010314.

AB The **battery** has a coiled stack contg. an **electrolyte** retaining separator between a cathode, contg. an active mass mixt. layer on a collector, and an anode, contg. an active mass mixt. layer on a collector; where the cathode active mass mixt. layer has an acidic phosphate ester or its salt. The phosphate is preferably 0.1-1% the wt. of the cathode active mass.

IT **78-42-2**  
(lithium cobalt oxide cathodes contg. acidic phosphate esters or their salts for secondary lithium **batteries**)

RN 78-42-2 HCA

CN Phosphoric acid, tris(2-ethylhexyl) ester (7CI, 8CI, 9CI) (CA INDEX NAME)



IC ICM H01M004-62

ICS H01M004-02; H01M010-40

CC **52-2** (Electrochemical, Radiational, and Thermal Energy Technology)

ST acidic phosphate ester cathode secondary **nonaq battery**; phosphate ester salt cathode secondary **nonaq battery**

- IT **Battery cathodes**  
 (lithium cobalt oxide cathodes contg. acidic phosphate esters or their salts for secondary lithium **batteries**)
- IT 12190-79-3, Cobalt lithium oxide (CoLiO<sub>2</sub>)  
 (lithium cobalt oxide cathodes contg. acidic phosphate esters or their salts for secondary lithium **batteries**)
- IT **78-42-2** 12788-93-1, Acid butyl phosphate  
 (lithium cobalt oxide cathodes contg. acidic phosphate esters or their salts for secondary lithium **batteries**)

L40 ANSWER 2 OF 8 HCA COPYRIGHT 2002 ACS

127:236774 **Nonaqueous electrolyte** secondary

**battery** containing phosphate triester in **electrolyte**

for cycle characteristics. Negoro, Masayuki; Ishizuka, Hiroshi; Matsufuji, Akihiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 09223516 A2 19970826 Heisei, 12 pp. (Japanese).

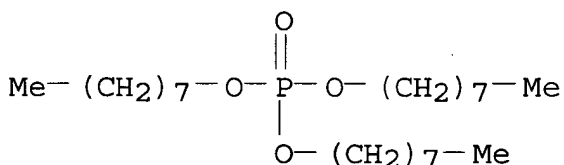
CODEN: JKXXAF. APPLICATION: JP 1996-26483 19960214.

- AB In the **battery**, which comprises a cathode made of a Li-intercalation compd., an anode made of an amorphous chalcogenide and/or oxide contg. .gtoreq.3 selected from Group IA, IIA, IIIA, IVA, and VA elements, a **nonaq. electrolyte** contg. a Li salt (e.g., LiBF<sub>4</sub>, LiPF<sub>6</sub>), and a separator, the **electrolyte** contain .gtoreq.1 phosphate triester. The **battery** has high capacity and improved cycle characteristics.

- IT **1806-54-8**, Trioctyl phosphate  
 (**nonaq. electrolyte** secondary **battery**  
 contg. phosphate triester in **electrolyte** for cycle characteristics)

RN 1806-54-8 HCA

CN Phosphoric acid, trioctyl ester (8CI, 9CI) (CA INDEX NAME)



IC ICM H01M010-40

ICS H01M004-02; H01M004-58

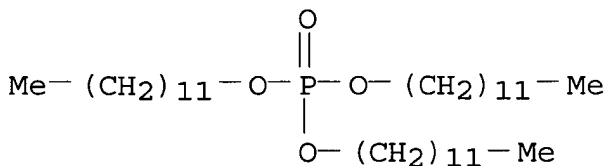
CC **52-2** (Electrochemical, Radiational, and Thermal Energy Technology)

ST **nonaq electrolyte battery** additive  
 phosphate triester

- IT **Battery electrolytes**  
 (**nonaq. electrolyte** secondary **battery**  
 contg. phosphate triester in **electrolyte** for cycle characteristics)

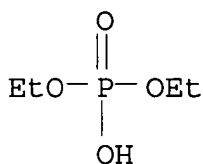
IT 14283-07-9, Lithium Boride fluoride (libf<sub>4</sub>) 21324-40-3, Lithium phosphorus fluoride (LiPF<sub>6</sub>)  
 (additive, **electrolyte** contg.; **nonaq.**)

- electrolyte secondary battery** contg. phosphate triester in **electrolyte** for cycle characteristics)
- IT 193217-88-8P  
(anode; **nonaq. electrolyte secondary battery** contg. phosphate triester in **electrolyte** for cycle characteristics)
- IT 12190-79-3P, Cobalt lithium oxide (colio2)  
(cathode; **nonaq. electrolyte secondary battery** contg. phosphate triester in **electrolyte** for cycle characteristics)
- IT 78-51-3 115-86-6, Triphenyl phosphate 115-96-8, Tris(chloroethyl) phosphate 126-73-8, Tributyl phosphate, uses 512-56-1, Trimethyl phosphate 867-17-4, Diethyl methyl phosphate 1330-78-5, Tricresyl phosphate 1449-89-4 **1806-54-8**, Trioctyl phosphate 2196-04-5, Ethylene methyl phosphate 7664-38-2D, Phosphoric acid, triesters, uses 16492-16-3, Ethylene phenyl phosphate  
(**nonaq. electrolyte secondary battery** contg. phosphate triester in **electrolyte** for cycle characteristics)
- L40 ANSWER 3 OF 8 HCA COPYRIGHT 2002 ACS  
126:49196 **Nonaqueous electrolyte batteries** using improved separators. Akutsu, Mitsuo; Kubota, Naohiro; Tominaga, Nobuhide; Mashita, Nobuya; Ooya, Keiji (Asahi Denka Kogyo Kk, Japan). Jpn. Kokai Tokkyo Koho JP 08273652 A2 19961018 Heisei, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-73774 19950330.
- AB The separators consist of thermoplastic resins contg. 0.01-5% O:P(OR1)(OR2)(OR3) (R1, R2, R3 = C8-30 alkyl, alkenyl). The separators have improved impregnation performance with **nonaq. electrolytes**, and the **batteries** have high capacity and voltage.
- IT **682-49-5**, Trilauryl phosphate  
(**nonaq. batteries** using thermoplastic separators contg.)
- RN 682-49-5 HCA  
CN Phosphoric acid, tridodecyl ester (8CI, 9CI) (CA INDEX NAME)



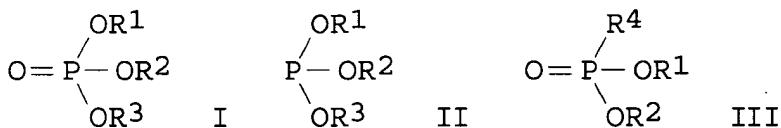
- IC ICM H01M002-16  
ICS H01M006-16
- CC **52-2** (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 38
- ST **battery nonaq** separator thermoplastic phosphate

- ester
- IT Primary **battery** separators  
Secondary **battery** separators  
(contg. phosphate esters)
- IT Polypropene fibers, uses  
(**nonaq. batteries** using thermoplastic separators contg. phosphate esters and nonwoven fabric of)
- IT **682-49-5**, Trilauryl phosphate 3305-68-8, Trioyleyl phosphate 4889-45-6, Tristearyl phosphate 64131-09-5  
(**nonaq. batteries** using thermoplastic separators contg.)
- IT 25085-53-4, Isotactic polypropylene  
(**nonaq. batteries** using thermoplastic separators contg. phosphate esters and nonwoven fabric of)
- IT 9002-88-4, Polyethylene  
(**nonaq. batteries** using thermoplastic separators contg. phosphate esters and porous membrane of)
- L40 ANSWER 4 OF 8 HCA COPYRIGHT 2002 ACS  
125:119572 **Nonaqueous electrolyte** solutions for **batteries**. Hibara, Akio; Yokoyama, Keiichi (Mitsui Petrochemical Ind, Japan). Jpn. Kokai Tokkyo Koho JP 08138733 A2 19960531 Heisei, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-272481 19941107.
- AB The **electrolyte** solns. contain a Li salt dissolved in an org. solvent and a Li salt of a phosphoric acid ester O:P(OR)(OR1)OLi, where R and R' are C1-4 alkyl, halogen substituted C2-4 alkyl, or Li, but not both R and R1 are Li. The phosphate is preferably di-Et lithium phosphate, and the solvent is selected from R2COOR3 (R2 = Me, Et, Pr, MeO, or EtO; R3 = linear or branched C1-3 alkyl), ethylene carbonate, propylene carbonate, butylene carbonate, vinyl carbonate, .gamma.-butyrolactone, and sulfolane. The **electrolyte** solns. are self fire extinguishing.
- IT **51501-07-6**  
(compns. of self fire extinguishing **nonaq. electrolyte** solns. contg. phosphoric acid ester lithium salts for **batteries**)
- RN 51501-07-6 HCA  
CN Phosphoric acid, diethyl ester, lithium salt (9CI) (CA INDEX NAME)

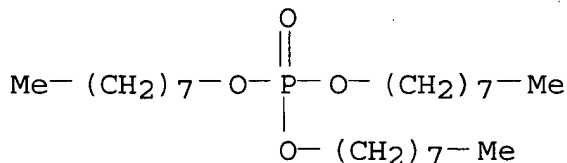


○ Li

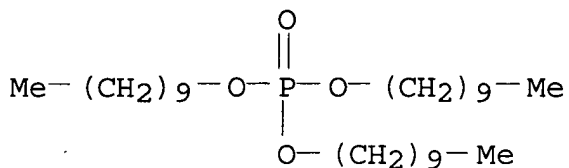
- IC ICM H01M010-40  
 CC **52-2** (Electrochemical, Radiational, and Thermal Energy Technology)  
 ST **battery electrolyte** phosphoric acid ester salt;  
**electrolyte** phosphoric acid ester lithium salt; safety  
**battery self fire extinguishing electrolyte**  
 IT **Battery electrolytes**  
 Safety  
 (comps. of self fire extinguishing **nonaq.**  
**electrolyte** solns. contg. phosphoric acid ester lithium  
 salts for **batteries**)  
 IT 96-49-1, Ethylene carbonate 623-53-0, Methyl ethyl carbonate  
 21324-40-3, Lithium hexafluorophosphate **51501-07-6**  
 (comps. of self fire extinguishing **nonaq.**  
**electrolyte** solns. contg. phosphoric acid ester lithium  
 salts for **batteries**)  
 L40 ANSWER 5 OF 8 HCA COPYRIGHT 2002 ACS  
 120:222453 Phosphorus compound treated separators for **nonaqueous**  
**electrolyte batteries**. Ono, Akira; Yoshino, Akira  
 (Asahi Chemical Ind, Japan). Jpn. Kokai Tokkyo Koho JP 06020672 A2  
 19940128 Heisei, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP  
 1992-173214 19920630.  
 GI



- AB The separators are microporous polyolefin membranes treated with phosphates (I-III), where R1-3 are C4-30 alkyl, allyl, aryl, aralkyl, or halogenated alkyl groups and R4 is C1-30 alkyl, allyl, aryl, aralkyl, or halogenated alkyl groups. These separators have high **electrolyte** absorption rate.  
 IT **1806-54-8**, Trioctyl phosphate **4200-55-9**, Tridecyl phosphate  
 (microporous polyethylene separators treated with, for **nonaq. batteries**)  
 RN 1806-54-8 HCA  
 CN Phosphoric acid, trioctyl ester (8CI, 9CI) (CA INDEX NAME)



RN 4200-55-9 HCA  
 CN Phosphoric acid, tris(decyl) ester (9CI) (CA INDEX NAME)

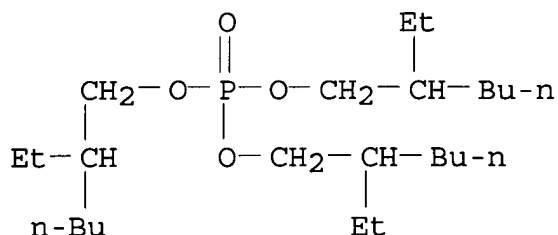


- IC ICM H01M002-16  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 ST **battery** separator polyolefin phosphate treatment  
 IT **Batteries**, secondary  
 (separators, polyolefin, phosphorus compd. treatment of, for rapid **nonaq. electrolyte** absorption)  
 IT 13598-36-2, Phosphonic acid  
 (esters, microporous polyethylene separators treated with, for **nonaq. batteries**)  
 IT 1806-54-8, Trioctyl phosphate 4200-55-9, Tridecyl phosphate 4889-45-6, Tristearyl phosphate 10294-56-1D, Phosphorous acid, triesters 56827-95-3, Tricetyl phosphate (microporous polyethylene separators treated with, for **nonaq. batteries**)  
 IT 9002-88-4, Polyethylene  
 (microporous separators, phosphorus compd. treated, for **nonaq. batteries**)
- L40 ANSWER 6 OF 8 HCA COPYRIGHT 2002 ACS  
 114:46609 **Nonaqueous batteries**. Ono, Akira; Yoshino, Akira (Asahi Chemical Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 02244565 A2 19900928 Heisei, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1989-63843 19890317.
- AB **Electrolytes of nonaq. batteries** contain 0.01-5 wt.% O:P(OR1)(OR2)(OR3), where R1-3 = C4-30 alkyl, aryl, allyl, aralkyl, haloalkyl; P(OR4)(OR5)(OR6), where R4-6 = C4-30 alkyl, aryl, allyl, aralkyl, haloalkyl; and/or O:PR7(OR8)(OR9), wher R7 = C1-30 alkyl, aryl, aralkyl, haloalkyl, and R8-9 = C4-30 alkyl, aryl, allyl, aralkyl, haloalkyl. These additives increase permeability of **electrolyte** in separator and provide a high capacity and voltage. Thus, an **electrolyte** of 1M LiClO4/propylene carbonate contg. 2% trioctyl phosphate was used in a **battery** having needle coke anode, LiCoO2 cathode, and porous polypropylene separator. A good permeation of **electrolyte** was obsd., and **battery** capacity was 1.9 A-h, vs. a bad permeation and capacity of 0.6 A-h for a ref. **battery** with **electrolyte** contg. 0.005% trioctyl phosphate.
- IT 78-42-2, Trioctyl phosphate 682-49-5, Trilauryl phosphate 13018-37-6, Trinonyl phosphate (electrolyte contg., **nonaq.**, for

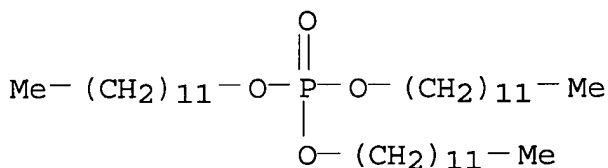


**batteries)**

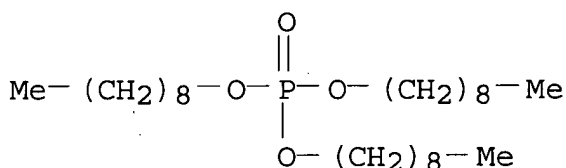
RN 78-42-2 HCA  
 CN Phosphoric acid, tris(2-ethylhexyl) ester (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 682-49-5 HCA  
 CN Phosphoric acid, tridodecyl ester (8CI, 9CI) (CA INDEX NAME)



RN 13018-37-6 HCA  
 CN Phosphoric acid, trinonyl ester (8CI, 9CI) (CA INDEX NAME)

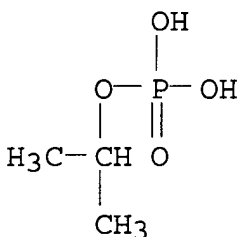


IC ICM H01M010-40  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 ST **electrolyte nonaq battery phosphorus**  
 compd; separator **nonaq electrolyte** permeation  
 IT **Batteries**, primary  
 (with **nonaq. electrolytes** contg. phosphorus  
 compds.)  
 IT 78-42-2, Trioctyl phosphate 78-46-6, Dibutyl  
 butylphosphonate 115-86-6, Triphenyl phosphate 126-73-8,  
 Tributyl phosphate, uses and miscellaneous 682-49-5,  
 Trilauryl phosphate 13018-37-6, Trinonyl phosphate  
 (**electrolyte** contg., **nonaq.**, for  
**batteries**)

L40 ANSWER 7 OF 8 HCA COPYRIGHT 2002 ACS  
 102:35240 **Electrolytes** in the anodic oxidation of titanium.  
 Climent Montoliu, F.; Capellades Font, R.; Vidal Planells, M. I.

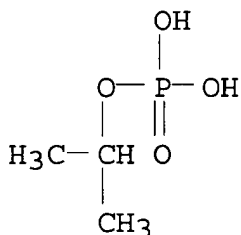
(Fac. Quim., Univ. Barcelona, Spain). Anales de Quimica, Serie B: Quimica Inorganica y Quimica Analitica, 79(2), 290-2 (Spanish) 1983. CODEN: AQSAD3. ISSN: 0211-1349.

- AB The breakdown potentials of TiO<sub>2</sub> (anatase) films formed anodically were studied in aq. and **nonaq.** solns. For potentials <50 V, an aq. soln. of citric acid (1.47%), pH 1.81 was found to have a breakdown potential at 25.degree. of 105 V. A soln. of NaOAc in ethylene glycol (2.97%), pK 7.8, had a breakdown potential at 25.degree. of 111 V. To operate condensers at .ltoreq.100 V, the following soln. was recommended: Na phosphate in ethylene glycol (0.4%) and iso-Pr phosphate (20%) which had a breakdown potential at 25.degree. of 215 V. These solns. had the highest breakdown potentials.
- IT **1623-24-1**  
(elec. breakdown potential of anodic titania films in **nonaq.** soln. contg.)
- RN 1623-24-1 HCA
- CN Phosphoric acid, mono(1-methylethyl) ester (9CI) (CA INDEX NAME)



- CC **72-7** (Electrochemistry)  
Section cross-reference(s): 76
- IT Electric breakdown  
(in anodization of titanium in aq. and **nonaq.** solns.)
- IT Anodization  
(of titanium, in aq. and **nonaq.** solns., breakdown potential in relation to)
- IT 13463-67-7, properties  
(anodic films of, breakdown potential of, in aq. and **nonaq.** solns.)
- IT 7440-32-6, uses and miscellaneous  
(anodization of, in aq. and **nonaq.** solns., breakdown potential in)
- IT 7558-79-4  
(elec. breakdown potential of anodic titania films in aq. and **nonaq.** solns. contg.)
- IT 77-92-9, properties 87-69-4, properties 127-09-3 144-62-7, properties 497-19-8, properties 631-61-8 1310-73-2, properties **1623-24-1** 18996-35-5  
(elec. breakdown potential of anodic titania films in **nonaq.** soln. contg.)
- IT 7664-38-2, properties 12007-57-7  
(elec. breakdown potential of anodic titania in aq. and

- nonaq.** solns. contg.)
- IT 7664-93-9, properties  
(elec. breakdown potential of anodic titania in **nonaq.**  
soln. contg.)
- L40 ANSWER 8 OF 8 HCA COPYRIGHT 2002 ACS  
98:115749 Anodic oxidation of titanium. Schmidt, H. K.; Capellades, R.;  
Vidal, M. I. (Lab. Invest. Componentes Electron. S. A., Fr.). Revue  
Technique Thomson-CSF, 14(3), 657-70 (French) 1982. CODEN: RTTCBG.  
ISSN: 0035-4279.
- AB A method is described for attaining forming voltages >100V, as well  
as for stabilizing the elec. parameters of the Ti/TiO<sub>2</sub> system in  
anodizing Ti for fabricating **electrolytic** capacitors. The  
3 solns. used for studying the anodic oxidn. of Ti at different  
operating voltages of 1-100V were: citric acid 1.79, NaOAc in  
ethylene glycol 2.97, and Na phosphate in ethylene glycol 0.4 +  
iso-Pr phosphate 20%. The layers of TiO<sub>2</sub> obtained in **nonaq**  
. **electrolytes** are much more adherent and uniform than  
those realized in aq. media.
- IT 1623-24-1  
(in anodization, of titanium at different operating voltages for  
**electrolytic** capacitors)
- RN 1623-24-1 HCA  
CN Phosphoric acid, mono(1-methylethyl) ester (9CI) (CA INDEX NAME)



- CC 72-7 (Electrochemistry)  
Section cross-reference(s): 76
- ST anodic oxidn titanium aq **nonaq**; anodization titanium  
**electrolyte** capacitor; citric acid anodization titanium;  
sodium acetate anodization titanium; phosphate isopropyl anodization  
titanium; ethylene glycol anodization titanium
- IT Anodization  
(of titanium, for **electrolytic** capacitors)
- IT Electric capacitors  
(**electrolytic**, anodization of titanium for)
- IT 7440-32-6, uses and miscellaneous  
(anodization of, for **electrolytic** capacitors)
- IT 77-92-9, uses and miscellaneous 107-21-1, uses and miscellaneous  
127-09-3 1623-24-1  
(in anodization, of titanium at different operating voltages for  
**electrolytic** capacitors)
- IT 7632-05-5 76483-21-1

(in anodization, of titanium at different operating voltages for **electrolytic** capacitors)

=> d 136 1-12 cbib abs hitstr hitind

L36 ANSWER 1 OF 12 HCA COPYRIGHT 2002 ACS

134:44552 Secondary **nonaqueous electrolyte**

**batteries** and their manufacture. Takezawa, Hideharu; Bito, Yasuhiko; Matsuda, Hiromu; Toyoguchi, Yoshinori (Matsushita Electric Industrial Co., Ltd., Japan). PCT Int. Appl. WO 2000076016 A1 20001214, 39 pp. DESIGNATED STATES: W: CN, JP, KR, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2000-JP3581 20000601. PRIORITY: JP 1999-158615 19990604.

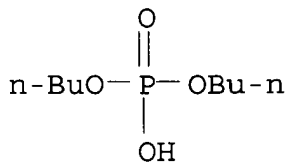
AB The **batteries** use cathodes, anodes, and/or Li salt **electrolyte** solns. contg. tri C7-12-alkyl phosphate, di C1-12-alkyl or di-aryl phosphate, and/or mono C1-12 alkyl phosphate or mono-aryl phosphate. The **batteries** are prepd. by using an electrode active mass, active mass paste, and/or electrodes contg. the phosphate ester.

IT 107-66-4, Dibutyl phosphate 598-02-7, Diethyl phosphate 682-49-5, Tridodecyl phosphate 813-78-5, Dimethyl phosphate 838-85-7, Diphenyl phosphate 1804-93-9, Dipropyl phosphate 1806-54-8, Trioctyl phosphate 3115-39-7, Dioctyl phosphate 3138-42-9, Dipentyl phosphate 3138-43-0, Dinonyl phosphate 3900-12-7, Diheptyl phosphate 3900-13-8, Dihexyl phosphate 4200-55-9, Tridecyl phosphate 4621-50-5, Triheptyl phosphate 7057-92-3, Didodecyl phosphate 7598-64-3, Diundecyl phosphate 7795-87-1, Didecyl phosphate 13018-37-6, Trinonyl phosphate 19541-53-8 54653-10-0 54653-24-6 86052-84-8 130675-91-1 130675-92-2 160087-64-9 312636-94-5 312636-95-6 312636-96-7 312636-97-8 312636-98-9 312636-99-0

(phosphate ester additives in electrodes and **electrolyte** solns. for secondary lithium **batteries**)

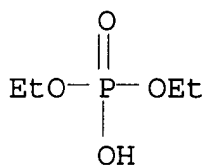
RN 107-66-4 HCA

CN Phosphoric acid, dibutyl ester (8CI, 9CI) (CA INDEX NAME)

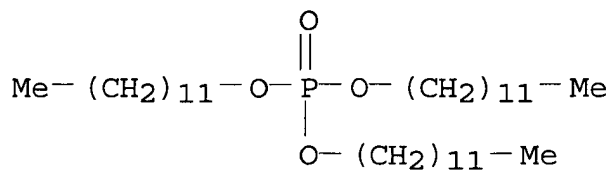


RN 598-02-7 HCA

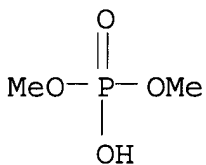
CN Phosphoric acid, diethyl ester (8CI, 9CI) (CA INDEX NAME)



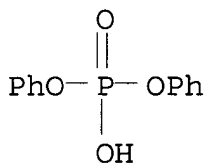
RN 682-49-5 HCA  
 CN Phosphoric acid, tridodecyl ester (8CI, 9CI) (CA INDEX NAME)



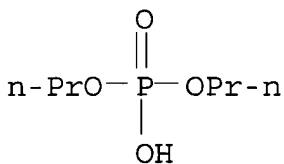
RN 813-78-5 HCA  
 CN Phosphoric acid, dimethyl ester (8CI, 9CI) (CA INDEX NAME)



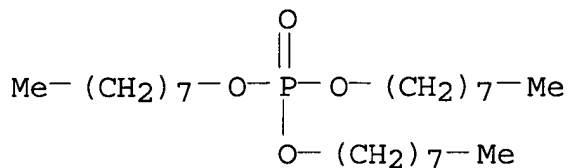
RN 838-85-7 HCA  
 CN Phosphoric acid, diphenyl ester (8CI, 9CI) (CA INDEX NAME)



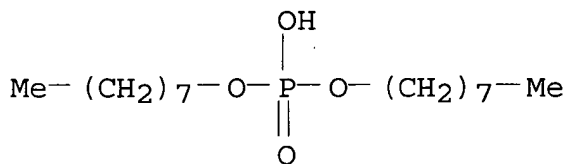
RN 1804-93-9 HCA  
 CN Phosphoric acid, dipropyl ester (8CI, 9CI) (CA INDEX NAME)



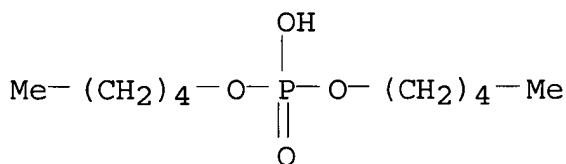
RN 1806-54-8 HCA  
 CN Phosphoric acid, trioctyl ester (8CI, 9CI) (CA INDEX NAME)



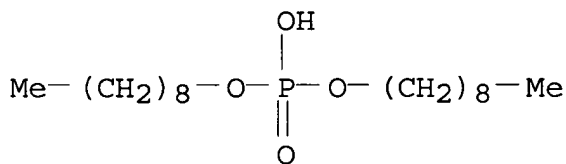
RN 3115-39-7 HCA  
CN Phosphoric acid, dioctyl ester (8CI, 9CI) (CA INDEX NAME)



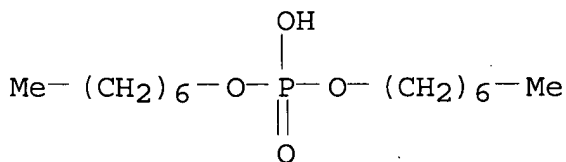
RN 3138-42-9 HCA  
CN Phosphoric acid, dipentyl ester (8CI, 9CI) (CA INDEX NAME)



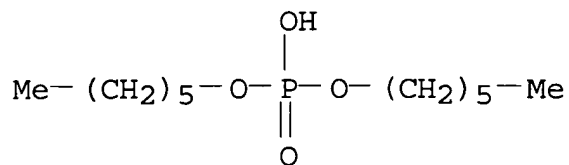
RN 3138-43-0 HCA  
CN Phosphoric acid, dinonyl ester (8CI, 9CI) (CA INDEX NAME)



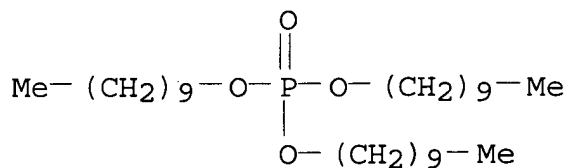
RN 3900-12-7 HCA  
CN Phosphoric acid, diheptyl ester (8CI, 9CI) (CA INDEX NAME)



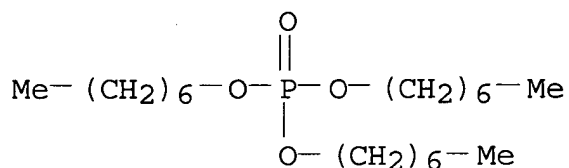
RN 3900-13-8 HCA  
CN Phosphoric acid, dihexyl ester (8CI, 9CI) (CA INDEX NAME)



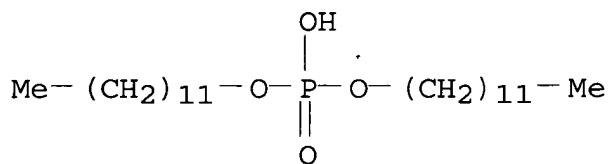
RN 4200-55-9 HCA  
 CN Phosphoric acid, tris(decyl) ester (9CI) (CA INDEX NAME)



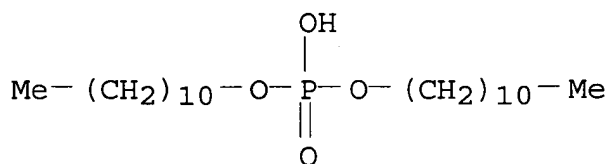
RN 4621-50-5 HCA  
 CN Phosphoric acid, triheptyl ester (8CI, 9CI) (CA INDEX NAME)



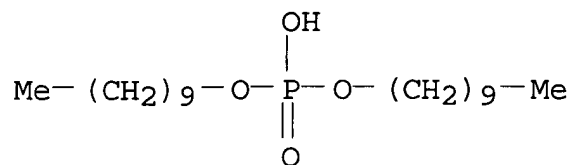
RN 7057-92-3 HCA  
 CN Phosphoric acid, didodecyl ester (8CI, 9CI) (CA INDEX NAME)



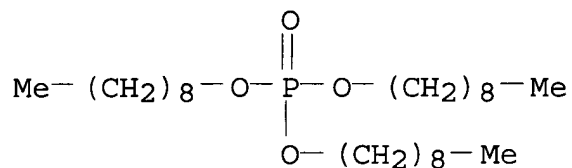
RN 7598-64-3 HCA  
 CN 1-Undecanol, hydrogen phosphate (9CI) (CA INDEX NAME)



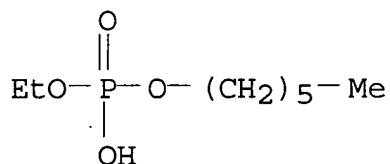
RN 7795-87-1 HCA  
 CN Phosphoric acid, didecyl ester (8CI, 9CI) (CA INDEX NAME)



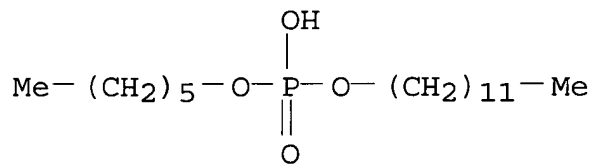
RN 13018-37-6 HCA  
 CN Phosphoric acid, trinonyl ester (8CI, 9CI) (CA INDEX NAME)



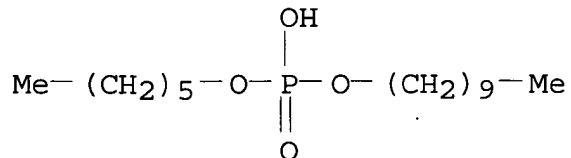
RN 19541-53-8 HCA  
 CN Phosphoric acid, monoethyl monoheptyl ester (9CI) (CA INDEX NAME)



RN 54653-10-0 HCA  
 CN Phosphoric acid, monododecyl monoheptyl ester (9CI) (CA INDEX NAME)

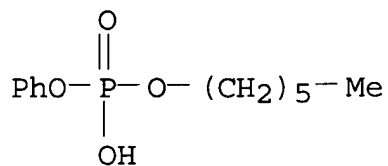


RN 54653-24-6 HCA  
 CN Phosphoric acid, monodecyl monoheptyl ester (9CI) (CA INDEX NAME)

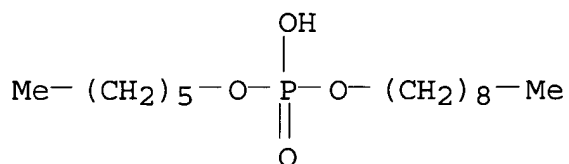


RN 86052-84-8 HCA  
 CN Phosphoric acid, monoheptyl monopentyl ester (9CI) (CA INDEX NAME)

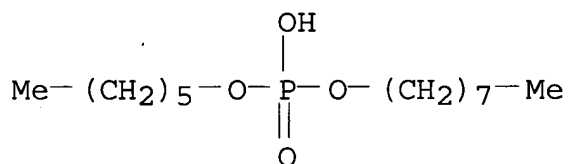




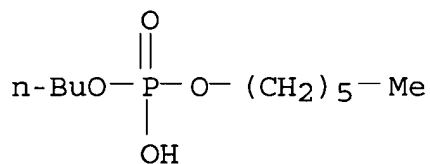
RN 130675-91-1 HCA  
 CN Phosphoric acid, monoheptyl monononyl ester (9CI) (CA INDEX NAME)



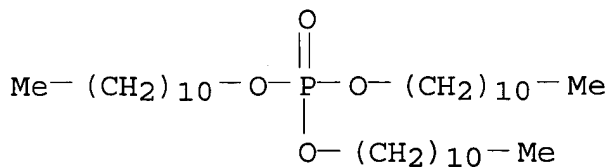
RN 130675-92-2 HCA  
 CN Phosphoric acid, monoheptyl mono-octyl ester (9CI) (CA INDEX NAME)



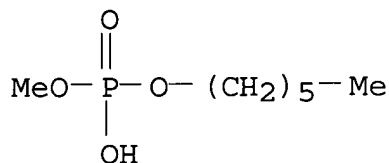
RN 160087-64-9 HCA  
 CN Phosphoric acid, monobutyl monoheptyl ester (9CI) (CA INDEX NAME)



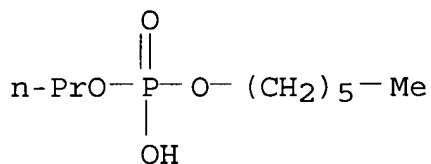
RN 312636-94-5 HCA  
 CN 1-Undecanol, phosphate (3:1) (9CI) (CA INDEX NAME)



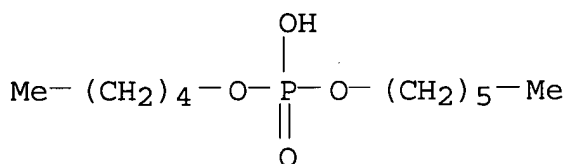
RN 312636-95-6 HCA  
 CN Phosphoric acid, monoheptyl monomethyl ester (9CI) (CA INDEX NAME)



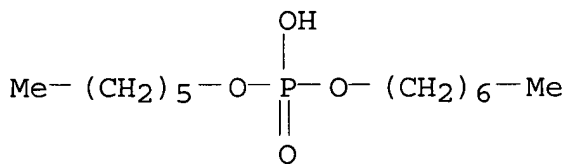
RN 312636-96-7 HCA  
CN Phosphoric acid, monoheptyl monopropyl ester (9CI) (CA INDEX NAME)



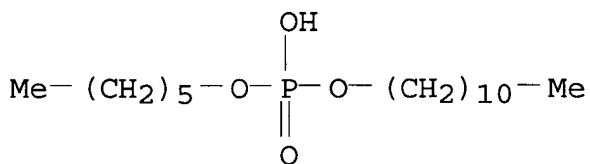
RN 312636-97-8 HCA  
CN Phosphoric acid, monoheptyl monopentyl ester (9CI) (CA INDEX NAME)



RN 312636-98-9 HCA  
CN Phosphoric acid, monoheptyl monoheptyl ester (9CI) (CA INDEX NAME)



RN 312636-99-0 HCA  
CN Phosphoric acid, monoheptyl monoundecyl ester (9CI) (CA INDEX NAME)



IC ICM H01M010-40  
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
ST secondary lithium **battery** phosphate ester additive

- IT Secondary **batteries**  
 (lithium; electrodes and **electrolyte** solns. contg.  
 phosphate ester additives for secondary lithium **batteries**  
 )
- IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate  
 7440-44-0, Carbon, uses 7791-03-9, Lithium perchlorate  
 12190-79-3, Cobalt lithium oxide (CoLiO<sub>2</sub>)  
 (electrodes and **electrolyte** solns. contg. phosphate  
 ester additives for secondary lithium **batteries**)
- IT 107-66-4, Dibutyl phosphate 598-02-7, Diethyl  
 phosphate 682-49-5, Tridodecyl phosphate 701-64-4,  
 Monophenyl phosphate 812-00-0, Monomethyl phosphate  
 813-78-5, Dimethyl phosphate 838-85-7, Diphenyl  
 phosphate 1623-06-9, Monopropyl phosphate 1623-14-9, Monoethyl  
 phosphate 1623-15-0, Monobutyl phosphate 1804-93-9,  
 Dipropyl phosphate 1806-54-8, Trioctyl phosphate  
 2382-76-5, Monopentyl phosphate 2627-35-2, Monododecyl phosphate  
 3115-39-7, Dioctyl phosphate 3138-42-9, Dipentyl  
 phosphate 3138-43-0, Dinonyl phosphate 3900-03-6,  
 Monoheptyl phosphate 3900-04-7, Monohexyl phosphate  
 3900-12-7, Diheptyl phosphate 3900-13-8, Dihexyl  
 phosphate 3921-30-0, Monodecyl phosphate 3991-73-9, Monooctyl  
 phosphate 4200-55-9, Tridecyl phosphate 4621-50-5  
 , Triheptyl phosphate 7057-92-3, Didodecyl phosphate  
 7598-64-3, Diundecyl phosphate 7795-87-1, Didecyl  
 phosphate 13018-37-6, Trinonyl phosphate  
 19541-53-8 36047-43-5, Monononyl phosphate 36047-45-7,  
 Monoundecyl phosphate 54653-10-0 54653-24-6  
 86052-84-8 130675-91-1 130675-92-2  
 160087-64-9 312636-94-5 312636-95-6  
 312636-96-7 312636-97-8 312636-98-9  
 312636-99-0  
 (phosphate ester additives in electrodes and **electrolyte**  
 solns. for secondary lithium **batteries**)

L36 ANSWER 2 OF 12 HCA COPYRIGHT 2002 ACS

132:287557 Aluminum **electrolytic** capacitor with no flash point  
 or degradation. Tsubaki, Yuichiro; Matsuura, Hiroyuki; Morokuma,  
 Munehiro; Minato, Koichiro; Nitta, Yukihiro (Matsushita Electric  
 Industrial Co., Ltd., Japan). Eur. Pat. Appl. EP 996134 A2  
 20000426, 20 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR,  
 GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO.  
 (English). CODEN: EPXXDW. APPLICATION: EP 1999-120360 19991013.  
 PRIORITY: JP 1998-290333 19981013; JP 1999-255249 19990909.

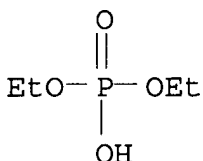
AB The present invention aims to provide a highly reliable Al  
**electrolytic** capacitor which has no flash points and shows  
 little change or degrdn. in external appearance and properties. The  
 H<sub>2</sub>O content of **electrolytic** soln. of the  
**electrolytic** capacitor of this invention is 20-90% and one  
 or more following compds. are included as main **electrolytes**  
 in the **electrolytic** soln. ; ammonium formate, ammonium  
 acetate, ammonium lactate, ammonium glycolate, ammonium oxalate,

ammonium succinate, ammonium malonate, ammonium adipate, ammonium benzoate, ammonium glutarate, and ammonium azelate. The **electrolytic** soln. also contains .gtoreq.1% of one or more compds. selected from org. carboxylic acids with a particular structure and ammonium salts of these org. acids. The m.p. of the **electrolytic** soln. is -10.degree. and under, the Cl content of a sealing material of the capacitor is .ltoreq.300 ppm to the wt. of the sealing material. The impedance ratio of 20.degree., 100 kHz to-10.degree., 100 kHz of the Al **electrolytic** capacitor is .ltoreq.4. The present invention can provide a highly reliable Al **electrolytic** capacitor of rated voltage of under 100 V, which achieves superior impedance and low temp. properties, and has little risk of ignition even when the **electrolytic** soln. is released.

IT 598-02-7, Diethyl phosphate 813-78-5, Dimethyl phosphate 1804-93-9, Dipropyl phosphate 1806-54-8, Trioctyl phosphate 3115-39-7 3900-13-8, Dihexyl phosphate 4200-55-9, Tridecyl phosphate 7795-87-1, Didecyl phosphate 44636-58-0  
(for aluminum **electrolytic** capacitor with nobelium flash point or degrdn.)

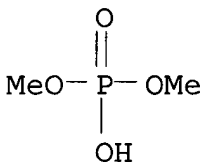
RN 598-02-7 HCA

CN Phosphoric acid, diethyl ester (8CI, 9CI) (CA INDEX NAME)



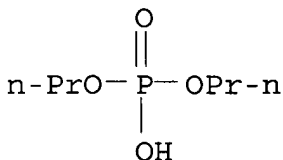
RN 813-78-5 HCA

CN Phosphoric acid, dimethyl ester (8CI, 9CI) (CA INDEX NAME)



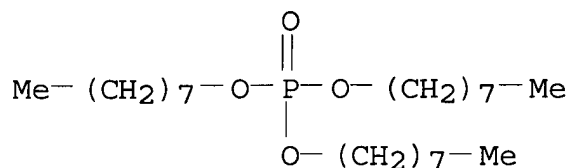
RN 1804-93-9 HCA

CN Phosphoric acid, dipropyl ester (8CI, 9CI) (CA INDEX NAME)



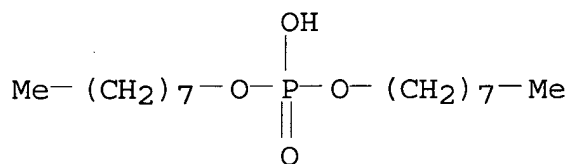
RN 1806-54-8 HCA

CN Phosphoric acid, trioctyl ester (8CI, 9CI) (CA INDEX NAME)



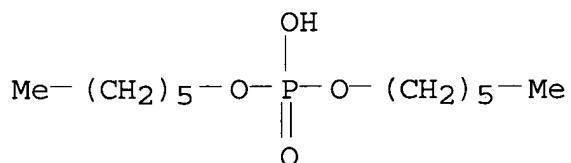
RN 3115-39-7 HCA

CN Phosphoric acid, dioctyl ester (8CI, 9CI) (CA INDEX NAME)



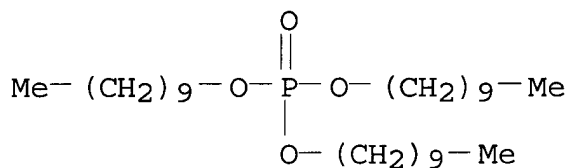
RN 3900-13-8 HCA

CN Phosphoric acid, dihexyl ester (8CI, 9CI) (CA INDEX NAME)



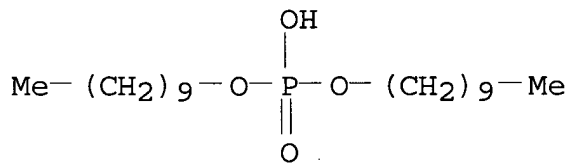
RN 4200-55-9 HCA

CN Phosphoric acid, tris(decyl) ester (9CI) (CA INDEX NAME)



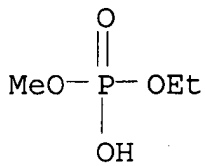
RN 7795-87-1 HCA

CN Phosphoric acid, didecyl ester (8CI, 9CI) (CA INDEX NAME)



RN 44636-58-0 HCA

CN Phosphoric acid, monoethyl monomethyl ester (9CI) (CA INDEX NAME)



- IC ICM H01G009-035  
 CC 76-10 (Electric Phenomena)  
 Section cross-reference(s): 38  
 ST aluminum **electrolytic** capacitor; **electrolyte**  
 ammonium carboxylate capacitor; phosphate ester **electrolytic**  
 capacitor; silicone **electrolytic** capacitor; silane  
**electrolytic** capacitor; carboxylic acid capacitor  
 IT Synthetic rubber, uses  
 (Isobutylene isopropylene; for aluminum **electrolytic**  
 capacitor with nobelium flash point or degrdn.)  
 IT Silanes  
 (alkoxy; for aluminum **electrolytic** capacitor with  
 nobelium flash point or degrdn.)  
 IT **Electrolytic** capacitors  
 (aluminum **electrolytic** capacitor with nobelium flash  
 point or degrdn.)  
 IT Carboxylic acids, uses  
 (ammonium salts; for aluminum **electrolytic** capacitor  
 with nobelium flash point or degrdn.)  
 IT **Electrolytes**  
 Sealing  
 (for aluminum **electrolytic** capacitor with nobelium  
 flash point or degrdn.)  
 IT Butyl rubber, uses  
 Carboxylic acids, uses  
 Polyoxyalkylenes, uses  
 Polysiloxanes, uses  
 Silanes  
 (for aluminum **electrolytic** capacitor with nobelium  
 flash point or degrdn.)  
 IT Alcohols, uses  
 (polyhydric; for aluminum **electrolytic** capacitor with  
 nobelium flash point or degrdn.)  
 IT Coupling agents  
 (silane; for aluminum **electrolytic** capacitor with  
 nobelium flash point or degrdn.)  
 IT Ethylene-propylene rubber  
 (terpolymer; aluminum **electrolytic** capacitor with  
 nobelium flash point or degrdn.)  
 IT 7429-90-5, Aluminum, uses  
 (aluminum **electrolytic** capacitor with nobelium flash  
 point or degrdn.)  
 IT 9010-85-9  
 (butyl rubber, for aluminum **electrolytic** capacitor with  
 nobelium flash point or degrdn.)

- IT 9010-79-1  
(ethylene-propylene rubber, terpolymer; aluminum **electrolytic** capacitor with nobelium flash point or degrdn.)
- IT 62-23-7, p-Nitrobenzoic acid 78-40-0, Triethyl phosphate  
88-75-5, o-Nitrophenol 91-23-6, o-Nitroanisole 100-02-7,  
p-Nitrophenol, uses 100-17-4, p-Nitroanisole 107-21-1, Ethylene glycol, uses 111-20-6, Sebacic acid, uses 121-92-6,  
m-Nitrobenzoic acid 124-04-9D, Adipic acid, tri-Me derivs.  
512-56-1, Trimethyl phosphate 513-08-6, Tripropyl phosphate  
515-98-0, Ammonium lactate 540-69-2, Ammonium formate 552-16-9,  
o-Nitrobenzoic acid 554-84-7, m-Nitrophenol 555-03-3,  
m-Nitroanisole **598-02-7**, Diethyl phosphate 631-61-8,  
Ammonium acetate **813-78-5**, Dimethyl phosphate 1113-38-8,  
Ammonium oxalate 1623-06-9, Monopropyl phosphate 1623-15-0,  
Monobutyl phosphate **1804-93-9**, Dipropyl phosphate  
**1806-54-8**, Trioctyl phosphate 1863-63-4, Ammonium benzoate  
2226-88-2, Ammonium succinate 2466-09-3, Pyrophosphoric acid  
2528-39-4, Trihexyl phosphate **3115-39-7** 3900-04-7,  
Monohexyl phosphate **3900-13-8**, Dihexyl phosphate  
3921-30-0, Monodecyl phosphate 3991-73-9, Monoctyl phosphate  
**4200-55-9**, Tridecyl phosphate 6303-21-5, Hypophosphorous  
acid 7664-38-2D, Phosphoric acid, alkyl esters, uses 7723-14-0D,  
Phosphorus, org. compds., uses **7795-87-1**, Didecyl  
phosphate 7803-65-8 9003-11-6, Ethylene oxide-propylene oxide  
copolymer 10347-88-3, 3-Tert-Butyladipic acid 18815-40-2,  
Ammonium malonate 19090-60-9, Ammonium adipate 25322-68-3,  
Polyethyleneglycol 29750-34-3, Ammonium glutarate 35249-89-9,  
Ammonium glycolate **44636-58-0** 50905-10-7,  
Decane-1,6-dicarboxylic acid 82169-85-5, Ammonium azelate  
83797-34-6 85090-57-9 88107-08-8 220208-63-9 260059-62-9  
263863-41-8  
(for aluminum **electrolytic** capacitor with nobelium  
flash point or degrdn.)

L36 ANSWER 3 OF 12 HCA COPYRIGHT 2002 ACS

127:100973 Sealing of pinholes of gold plating on electric connectors.  
Fukamachi, Kazuhiko; Hatanaka, Hiroyuki (Nippon Mining Co., Ltd.,  
Japan). Jpn. Kokai Tokkyo Koho JP 09170096 A2 19970630 Heisei, 8  
pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-330474  
19951219.

AB Au (alloy)-plated and Ni (alloy)-deposited connectors are treated by  
d.c. **electrolysis** at voltage E 0.1-5.0 V with the Au  
plating as an anode in an emulsion soln. prepd. by adding 0.01-5.0  
wt.% self-emulsifier to an inhibitor aq. soln. to fill the pinholes  
of the Au plating. The soln. preferably contains .gtoreq.1 cyclic N  
compd. forming chelates with Ni or a substrate metal in total  
10-1000 ppm as an inhibitor. The treated connectors show high  
corrosion resistance, excellent stability of elec. contacts, and  
improved lubricity.

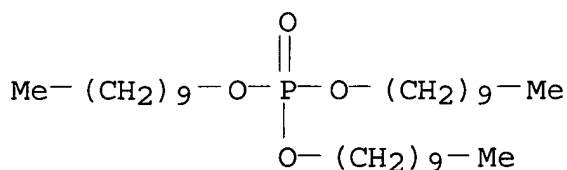
IT **4200-55-9 7795-87-1**

(emulsifier; sealing of gold plating pinholes on nickel-coated

connectors with emulsifier-contg. inhibitor soln. for corrosion resistance and lubricity)

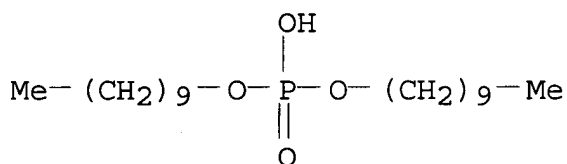
RN 4200-55-9 HCA

CN Phosphoric acid, tris(decyl) ester (9CI) (CA INDEX NAME)



RN 7795-87-1 HCA

CN Phosphoric acid, didecyl ester (8CI, 9CI) (CA INDEX NAME)



IC ICM C25D011-34

ICS C23C028-00

CC 72-6 (Electrochemistry)

Section cross-reference(s): 56, 76

IT 3921-30-0 4200-55-9 7795-87-1 13089-30-0

64569-85-3 172601-11-5

(emulsifier; sealing of gold plating pinholes on nickel-coated connectors with emulsifier-contg. inhibitor soln. for corrosion resistance and lubricity)

L36 ANSWER 4 OF 12 HCA COPYRIGHT 2002 ACS

124:94699 Pore sealing of gold- or gold alloy-coated metal substrates with nickel or nickel alloy undercoat. Fukamachi, Kazuhiko; Hatanaka, Hiroyuki (Nippon Mining Co Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 07258888 A2 19951009 Heisei, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-53842 19940324.

AB Pore sealing of Au- or Au alloy-coated metal substrates with Ni or Ni alloy undercoat is conducted by d.c. **electrolysis** at anode c.d. .gtoreq.0.05 A/dm<sup>2</sup> and electricity 0.05x10<sup>-3</sup> - 50x10<sup>-3</sup> C/dm<sup>2</sup> using the substrates as anode in a sealing soln. prepd. by adding 0.01-5.0 wt.% self emulsifying agent to an aq. soln. contg. 10-1000 ppm cyclic N compd(s). as inhibitors which can form chelates with Ni or metal substrates. The substrates are preferably connector contacts.

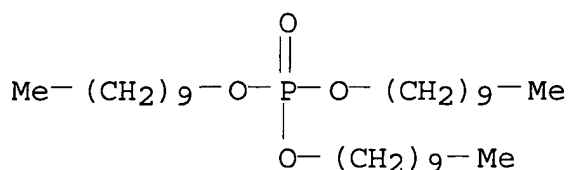
IT 4200-55-9 7795-87-1

(self emulsifying agent; pore sealing of gold- or gold alloy-coated metal substrates with nickel or nickel alloy undercoat by d.c. **electrolysis** in solns. contg. inhibitor and self emulsifying agent)

RN 4200-55-9 HCA

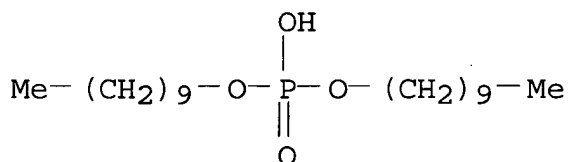


CN Phosphoric acid, tris(decyl) ester (9CI) (CA INDEX NAME)



RN 7795-87-1 HCA

CN Phosphoric acid, didecyl ester (8CI, 9CI) (CA INDEX NAME)



IC ICM C25D009-02

ICS C25D007-00; C25D011-34

CC 56-6 (Nonferrous Metals and Alloys)

Section cross-reference(s): 76

ST gold coated alloy sealing **electrolysis**; connector contact

gold coated alloy

IT Electric contacts

**Electrolysis**

Sealing

(pore sealing of gold- or gold alloy-coated metal substrates with nickel or nickel alloy undercoat by d.c. **electrolysis** in solns. contg. inhibitor and self emulsifying agent)

IT Paraffin waxes and Hydrocarbon waxes, uses

Petrolatum

(pore sealing of gold- or gold alloy-coated metal substrates with nickel or nickel alloy undercoat by d.c. **electrolysis** in solns. contg. inhibitor and self emulsifying agent)

IT Gold alloy, base

(pore sealing of gold- or gold alloy-coated metal substrates with nickel or nickel alloy undercoat by d.c. **electrolysis** in solns. contg. inhibitor and self emulsifying agent)

IT Nickel alloy, base

(pore sealing of gold- or gold alloy-coated metal substrates with nickel or nickel alloy undercoat by d.c. **electrolysis** in solns. contg. inhibitor and self emulsifying agent)

IT 51-17-2, 1H-Benzimidazole 95-14-7, 1H-Benzotriazole 120-72-9,  
1H-Indole, uses 149-30-4, 2(3H)-Benzothiazolethione 271-44-3,  
1H-Indazole 59866-75-0

(inhibitors; pore sealing of gold- or gold alloy-coated metal substrates with nickel or nickel alloy undercoat by d.c. **electrolysis** in solns. contg. inhibitor and self emulsifying agent)

IT 7440-57-5, Gold, processes 12732-18-2

- (pore sealing of gold- or gold alloy-coated metal substrates with nickel or nickel alloy undercoat by d.c. **electrolysis** in solns. contg. inhibitor and self emulsifying agent)
- IT 4200-55-9 7795-87-1 13089-30-0 64569-85-3  
172601-11-5  
(self emulsifying agent; pore sealing of gold- or gold alloy-coated metal substrates with nickel or nickel alloy undercoat by d.c. **electrolysis** in solns. contg. inhibitor and self emulsifying agent)
- IT 7440-02-0, Nickel, uses 12623-52-8  
(undercoat; pore sealing of gold- or gold alloy-coated metal substrates with nickel or nickel alloy undercoat by d.c. **electrolysis** in solns. contg. inhibitor and self emulsifying agent)

L36 ANSWER 5 OF 12 HCA COPYRIGHT 2002 ACS

110:14942 Enhanced lifetime and adhesion of potassium ion-, ammonium ion-, and calcium ion- sensitive membranes on solid surfaces using hydroxyl-modified polyvinylchloride matrices. Harrison, D. Jed; Cunningham, Linda L.; Li, Xizhong; Teclemariam, Alem; Permann, Del (Dep. Chem., Univ. Alberta, Edmonton, AB, T6G 2G2, Can.). Journal of the Electrochemical Society, 135(10), 2473-8 (English) 1988. CODEN: JESOAN. ISSN: 0013-4651.

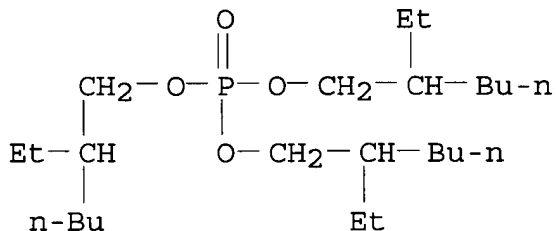
AB Liq.-liq. junction membranes prepd. from a modified polyvinylchloride (PVC) polymer with 0.6 wt.% OH introduced, (PVC-OH) and 0.25 wt.% SiCl<sub>4</sub> added during casting substantially enhanced adhesion to glass or Si compared to PVC-based membranes. Ion-selective electrodes for NH<sub>4</sub><sup>+</sup> based on a dioctyladipate/nonactin ion exchanger show enhanced adhesion, as do Ca<sup>2+</sup> membranes using a neutral ion carrier/o-nitrophenyloctyl ether mixt. Enhanced surface adhesion was demonstrated to result in improved lifetime for K<sup>+</sup>-sensitive membranes coated on n-Si electrodes and on ion-sensitive field effect transistors. Electron micrographs show large differences in surface quality for PVC vs. PVC-OH/SiCl<sub>4</sub>-based membranes after aq. storage.

IT 78-42-2 20328-55-6

(additive, in fabrication of ion-selective electrode based on polyvinylchloride modified with hydroxyl)

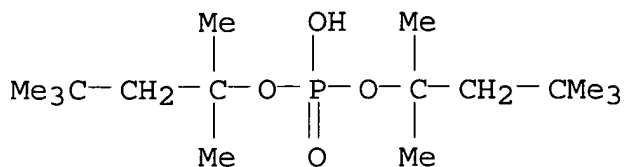
RN 78-42-2 HCA

CN Phosphoric acid, tris(2-ethylhexyl) ester (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 20328-55-6 HCA

CN 2-Pentanol, 2,4,4-trimethyl-, hydrogen phosphate (8CI, 9CI) (CA INDEX NAME)



CC 72-2 (Electrochemistry)

Section cross-reference(s): 66, 79

IT 78-42-2 1754-47-8, Dioctylphenylphosphonate 2001-95-8,  
 Valinomycin 3244-41-5 6833-84-7, Nonactin 20328-55-6  
 37682-29-4, o-Nitrophenyloctylether 58801-34-6, ETH 1001  
 (additive, in fabrication of ion-selective electrode based on  
 polyvinylchloride modified with hydroxyl)

L36 ANSWER 6 OF 12 HCA COPYRIGHT 2002 ACS

106:14901 Studies on biomimetic membranes IX. Ionic permeability and stability of supported liquid membranes. Kikkawa, Masayoshi; Sugiura, Masaaki; Shinbo, Toshio; Yamaguchi, Tomohiko; Nishimura, Koichiro; Fukaya, Toshio; Kodaka, Masato (Natl. Chem. Lab. Ind., Japan). Kagaku Gijutsu Kenkyusho Hokoku, 81(6), 301-7 (Japanese) 1986. CODEN: KKGHEP. ISSN: 0388-3213.

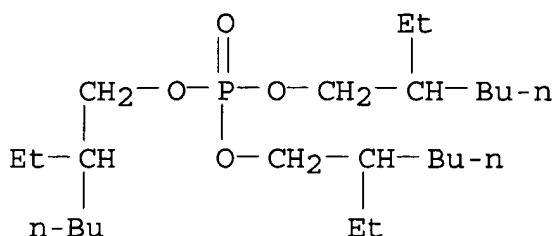
AB The up-hill transport rate of picrate anion across supported liq. membranes, prepd. from various org. liqs. and contg. K<sup>+</sup> carriers, and the membrane potential with elapsed time were measured. The ionic permeability and stability of the liq. membranes and the carrier-mediated transport were discussed. When the arom. compds. such as nitrophenol derivs., arom. ethers, alkylbenzenes, and alkylbenzoates were used as the org. liq., a large flux of picrate anion was obsd. in most of these liq. membranes. In addn., the changes of membrane potentials were small because of high stability of the membranes. On the other hand, the picrate-ion flux for the alkyl dicarboxylates was small except for their Bu esters. In the case of glycerides and phosphates, the picrate flux was affected by the type of carrier. Most of these liq. membranes showed a high stability.

IT 78-42-2 298-07-7

(liq. membranes, ionic permeability and stability of potassium carrier-contg.)

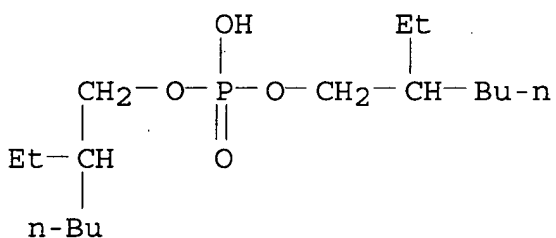
RN 78-42-2 HCA

CN Phosphoric acid, tris(2-ethylhexyl) ester (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 298-07-7 HCA

CN Phosphoric acid, bis(2-ethylhexyl) ester (8CI, 9CI) (CA INDEX NAME)

CC 6-6 (General Biochemistry)  
Section cross-reference(s): 22IT **Electrolytes**  
(permeability of org. liq. membranes contg. potassium carriers to)

IT 60-01-5, Tri-n-butyryn 78-30-8 78-32-0 **78-42-2**  
 99-62-7, m-Diisopropylbenzene 100-18-5, p-Di-iso-propylbenzene  
 101-81-5, Diphenylmethane 101-84-8, Diphenyl ether 102-25-0,  
 1,3,5-Triethylbenzene 103-23-1 103-50-4, Dibenzyl ether  
 105-05-5, p-Diethylbenzene 105-75-9, Fumaric acid di-n-butyl ester  
 105-76-0, Maleic acid di-n-butyl ester 105-99-7, Adipic acid  
 di-n-butyl ester 106-19-4, Adipic acid di-n-propyl ester  
 109-43-3, Sebacic acid di-n-butyl ester 111-03-5,  
 .alpha.-Monoolein 112-80-1, Oleic acid, properties 120-50-3,  
 Benzoic acid iso-butyl ester 122-62-3, Sebacic acid di  
 (2-ethylhexyl) ester 123-25-1, Succinic acid diethyl ester  
 135-01-3, o-Diethylbenzene 136-60-7, Benzoic acid n-butyl ester  
 141-04-8, Adipic acid di-iso-butyl ester 141-05-9, Maleic acid  
 diethyl ester 141-28-6, Adipic acid diethyl ester 141-93-5,  
 m-Diethylbenzene 142-77-8 **298-07-7** 538-23-8  
 538-68-1, n-Amylbenzene 621-70-5 622-08-2, 2-(Benzyloxy) ethanol  
 624-48-6 627-93-0, Adipic acid dimethyl ester 939-48-0, Benzoic  
 acid iso-propyl ester 1077-16-3 1078-71-3 2049-95-8,  
 tert-Amylbenzene 2049-96-9 2216-12-8, o-Nitrophenyl phenyl ether  
 2287-83-4 2998-04-1, Adipic acid diallyl ester 4074-90-2, Adipic  
 acid divinyl ester 6938-94-9, Adipic acid di-isopropyl ester  
 7664-38-2D, esters 13023-13-7 13565-36-1, p-Nitrophenyl heptyl  
 ether 15440-98-9, p-Nitrophenyl hexyl ether 16507-61-2, Oleyl  
 chloride 37682-29-4, o-Nitrophenyl octyl ether 82052-70-8  
 (liq. membranes, ionic permeability and stability of potassium

carrier-contg.)

L36 ANSWER 7 OF 12 HCA COPYRIGHT 2002 ACS

104:208885 Conductive coating. Eikuchi, Kichiji; Kitamura, Hajime; Tsuchida, Michinori (Shin-Etsu Chemical Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 60226569 A2 19851111 Showa, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1984-82378 19840424.

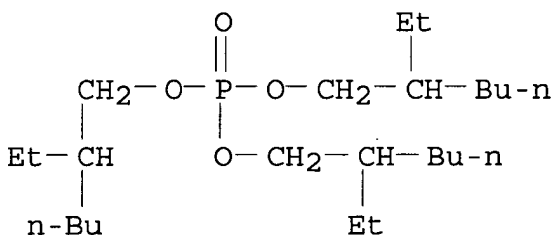
AB Coatings with durable elec. cond. contain polymers, powd. Cu or alloys, and phosphate esters. Thus, a mixt. of **electrolytic** Cu powder (av. size 20 .mu.) 80, Coatax LG-542 (acrylic polymer, 43% solids) 20 (as solid), and BuOPO(OH)2 0.5 part was coated on polyester film and dried to give a film with vol. sp. resistance 0.002, 0.005, and 0.01 .OMEGA.-cm after 0, 100, and 500 h, resp., at 100.degree..

IT 78-42-2 107-66-4 298-07-7  
838-85-7

(in elec. conductive coatings)

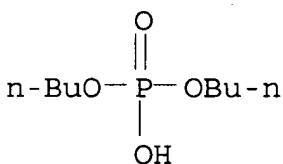
RN 78-42-2 HCA

CN Phosphoric acid, tris(2-ethylhexyl) ester (7CI, 8CI, 9CI) (CA INDEX NAME)



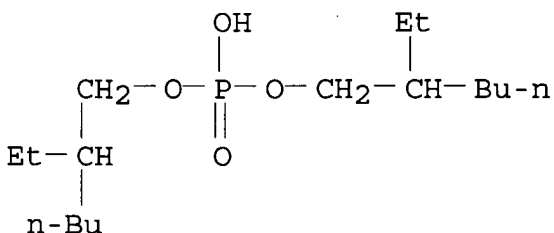
RN 107-66-4 HCA

CN Phosphoric acid, dibutyl ester (8CI, 9CI) (CA INDEX NAME)

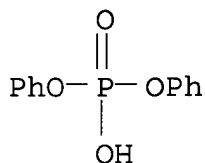


RN 298-07-7 HCA

CN Phosphoric acid, bis(2-ethylhexyl) ester (8CI, 9CI) (CA INDEX NAME)



RN 838-85-7 HCA  
 CN Phosphoric acid, diphenyl ester (8CI, 9CI) (CA INDEX NAME)



IC ICM C09D005-24  
 CC 42-5 (Coatings, Inks, and Related Products)  
 IT 78-42-2 83-86-3 107-66-4 298-07-7  
 838-85-7 1070-03-7 1623-15-0 2627-35-2 3040-56-0  
 4167-12-8 14260-97-0 14260-98-1 26982-05-8 29224-31-5  
 32435-46-4  
 (in elec. conductive coatings)

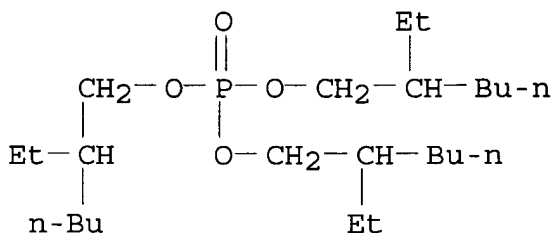
L36 ANSWER 8 OF 12 HCA COPYRIGHT 2002 ACS

103:162192 Analytical characterization of phosphoric ester type industrial products. Angelescu, Anca; Ionescu, Magdalena; Ponoran, Ileana; Baloiu, Liviu Mihai; Dinca, Viorica; Gusatu, Nicolae (Acad. Stud. Econ., Bucharest, Rom.). Revistade Chimie (Bucharest, Romania), 36(6), 549-52 (Romanian) 1985. CODEN: RCBUAU. ISSN: 0034-7752.

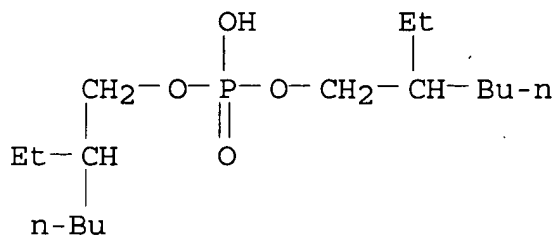
AB The anal. characterization of the surface-active industrial products based on ethoxylated phosphoric esters without a previous sepn. was performed by correlating thin-layer chromatog. data with the results of potentiometric titrn. in **nonaq.** media and of IR quant. spectrophotometric data.

IT 78-42-2 298-07-7  
 (potentiometric titrn. of, as model for ethoxylated alkyl phosphate surfactants)

RN 78-42-2 HCA  
 CN Phosphoric acid, tris(2-ethylhexyl) ester (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 298-07-7 HCA  
 CN Phosphoric acid, bis(2-ethylhexyl) ester (8CI, 9CI) (CA INDEX NAME)



CC 46-3 (Surface Active Agents and Detergents)

IT 78-42-2 298-07-7 1070-03-7  
 (potentiometric titrn. of, as model for ethoxylated alkyl  
 phosphate surfactants)

L36 ANSWER 9 OF 12 HCA COPYRIGHT 2002 ACS

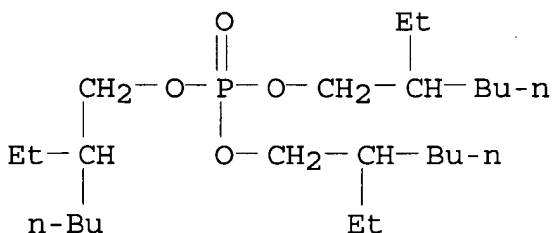
93:215001 Method and apparatus for detecting zinc ion activity.  
 Fiedler-Linnersund, Ulla M.; Bhatti, Khan M.; Johansson, Gillis  
 (Swed.). U.S. US 4224114 19800923, 7 pp. (English). CODEN:  
 USXXAM. APPLICATION: US 1979-41743 19790524.

AB An ion-selective electrode is described for detg. Zn<sup>2+</sup> activity in  
 solns. The electrode membrane contains a liq. ion exchanger, e.g.  
 di-2-ethylhexyl phosphate; solvent, e.g. tri-2-ethylhexyl phosphate  
 and PVC. The selectivity coeffs. of the electrode towards diverse  
 cations are given.

IT 78-42-2  
 (as solvent, in zinc-selective electrode membrane)

RN 78-42-2 HCA

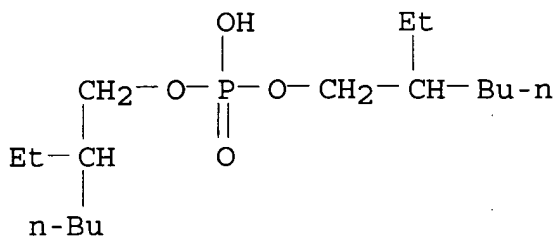
CN Phosphoric acid, tris(2-ethylhexyl) ester (7CI, 8CI, 9CI) (CA INDEX  
 NAME)



IT 25000-32-2  
 (in zinc-selective electrode membrane)

RN 25000-32-2 HCA

CN Phosphoric acid, bis(2-ethylhexyl) ester, zinc salt (8CI, 9CI) (CA  
 INDEX NAME)



● 1/2 Zn

IC G01N027-30; G01N027-46

NCL 204001000T

CC 79-2 (Inorganic Analytical Chemistry)

Section cross-reference(s): 72

IT 78-42-2

(as solvent, in zinc-selective electrode membrane)

IT 9002-86-2 25000-32-2

(in zinc-selective electrode membrane)

L36 ANSWER 10 OF 12 HCA COPYRIGHT 2002 ACS

92:121070 Development of polymeric membranes for zinc ion-selective electrodes. Fiedler-Linnersund, Ulla; Bhatti, Khan M. (Dep. Anal. Chem., Univ. Lund, Lund, S 220 07, Swed.). Analytica Chimica Acta, 111(1), 57-70 (English) 1979. CODEN: ACACAM. ISSN: 0003-2670.

AB Several polymeric membranes for Zn ion-selective electrodes were investigated. By optimizing the choice of solvent mediator and ligand, selectivity for Zn ions can be obtained. The applicability of a theory proposing membrane selectivities as a results of both solvent and site properties is demonstrated. The concept of soly. parameters is used in discussing the detection limits obtained. The best electrode is based on a PVC membrane contg. the Zn salt of bis(2-ethylhexyl) phosphoate dissolved in tri(2-ethylhexyl) phosphate. It is the first ion-selective electrode which responds primarily to Zn. The sensor, which has a lifetime of a least 2 mo, is characterized by a rapid response, potential stability and good sensitivity caused by a super-Nernstian slope (43.8 mV/pZn); the detection limit is 4.5 +/- 0.1 pZn.

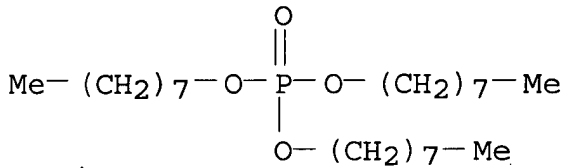
IT 1806-54-8

(as solvent mediator for polymeric membranes, zinc-selective electrode response in relation to)

RN 1806-54-8 HCA

CN Phosphoric acid, trioctyl ester (8CI, 9CI) (CA INDEX NAME)



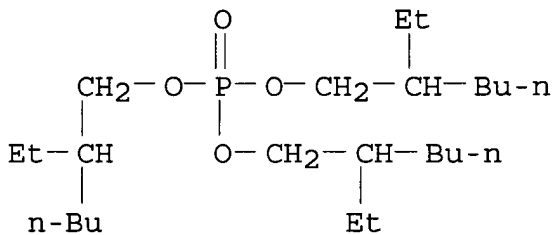


IT 78-42-2

(as solvent mediator in polymeric membranes for zinc-selective electrodes)

RN 78-42-2 HCA

CN Phosphoric acid, tris(2-ethylhexyl) ester (7CI, 8CI, 9CI) (CA INDEX NAME)

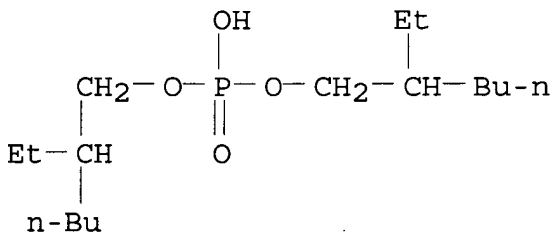


IT 25000-32-2

(in polymeric membranes for zinc-selective electrodes)

RN 25000-32-2 HCA

CN Phosphoric acid, bis(2-ethylhexyl) ester, zinc salt (8CI, 9CI) (CA INDEX NAME)



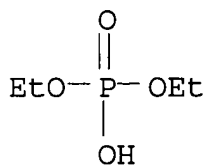
● 1/2 Zn

IT 4615-25-2 31411-06-0 73008-55-6  
73008-56-7

(polymeric membranes contg., selectivity in response of, in zinc-selective electrodes)

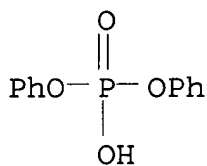
RN 4615-25-2 HCA

CN Phosphoric acid, diethyl ester, zinc salt (8CI, 9CI) (CA INDEX NAME)



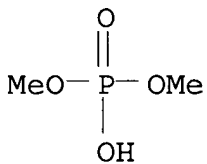
1/2 Zn

RN 31411-06-0 HCA  
CN Phosphoric acid, diphenyl ester, zinc salt (8CI, 9CI) (CA INDEX NAME)



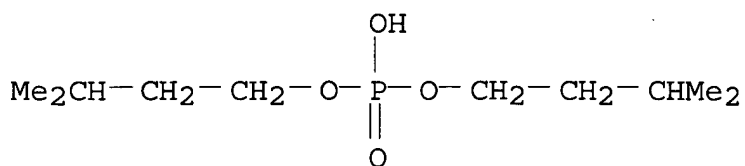
1/2 Zn

RN 73008-55-6 HCA  
CN Phosphoric acid, dimethyl ester, zinc salt (9CI) (CA INDEX NAME)



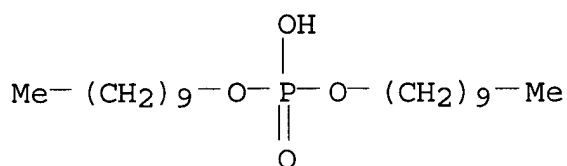
1/2 Zn

RN 73008-56-7 HCA  
CN 1-Butanol, 3-methyl-, hydrogen phosphate, zinc salt (9CI) (CA INDEX NAME)



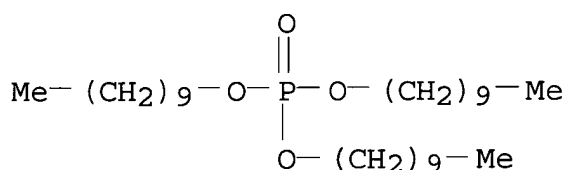
● 1/2 Zn

- CC 79-2 (Inorganic Analytical Chemistry)  
Section cross-reference(s): 72
- IT 78-46-6 112-30-1 1754-47-8 1806-54-8 6418-56-0  
(as solvent mediator for polymeric membranes, zinc-selective electrode response in relation to)
- IT 78-42-2  
(as solvent mediator in polymeric membranes for zinc-selective electrodes)
- IT 25000-32-2  
(in polymeric membranes for zinc-selective electrodes)
- IT 4615-25-2 31411-06-0 72732-62-8 72971-81-4  
73008-55-6 73008-56-7 73008-57-8 73019-97-3  
73019-98-4 73019-99-5 73020-00-5  
(polymeric membranes contg., selectivity in response of, in zinc-selective electrodes)
- L36 ANSWER 11 OF 12 HCA COPYRIGHT 2002 ACS  
85:86589 Studies on the role of the solvent on the selectivity of the calcium liquid membrane electrode. Garbett, K. (Cent. Electr. Res. Lab., Leatherhead/Surrey, Engl.). Proc. Anal. Div. Chem. Soc., 12(2), 60-4 (English) 1975. CODEN: PADSDZ.
- AB Direct solvent interactions, in which steric interactions play a significant role, are responsible for the obsd. influence of solvents on selectivity of Ca liq. membrane electrodes with membranes formed from solns. contg. 0.1 wt.% Ca bis(di-n-decyl phosphate) (I) in org. solvents satd. with H<sub>2</sub>O: highest selectivity for Ca was obsd. with tri-n-alkyl phosphate solvents with long-chain alkyl groups. The lower limits of Nernstian response and the selectivity consts. were detd. The variations in the response to Ca, Cu, Mg, Ni, and Na were detd. for electrodes prepd. from I solns. in C<sub>5</sub>-8 and C<sub>10</sub> alcs., tri-n-alkyl phosphates (C<sub>3</sub>-8 and C<sub>10</sub>), and 10 isomeric octanol solvents. Satisfactory electrodes could not be prepd. from I solns. in other solvents (nitrobenzene, toluene, n-decane, diisobutyl ketone, Bu<sub>2</sub>O, or Bu propionate).
- IT 21192-46-1  
(in calcium-selective liq.-membrane electrode)
- RN 21192-46-1 HCA  
CN Phosphoric acid, didecyl ester, calcium salt (8CI, 9CI) (CA INDEX NAME)



● 1/2 Ca

IT 4200-55-9  
 (solvent effect of, on selectivity of calcium liq.-membrane electrodes contg. calcium bis(didecyl phosphate))  
 RN 4200-55-9 HCA  
 CN Phosphoric acid, tris(decyl) ester (9CI) (CA INDEX NAME)



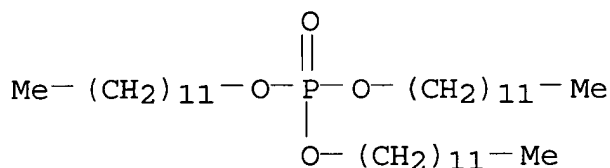
CC 79-1 (Inorganic Analytical Chemistry)  
 Section cross-reference(s): 72  
 IT 21192-46-1  
 (in calcium-selective liq.-membrane electrode)  
 IT 4200-55-9  
 (solvent effect of, on selectivity of calcium liq.-membrane electrodes contg. calcium bis(didecyl phosphate))

L36 ANSWER 12 OF 12 HCA COPYRIGHT 2002 ACS  
 56:19446 Original Reference No. 56:3732b-e Thixotropic lubricants containing reaction products of abietylamine and organic phosphates. Eisenhauer, Roy J.; Zajac, Stephen J. (Standard Oil Co. (Indiana)). US 3000820 19590415 (Unavailable). APPLICATION: US .  
 AB The reaction product of abietylamine with a dialkyl, diaryl, or atkyl aryl phosphate and a fatty acid forms a thixotropic thickening agent which is capable of suspending .gtoreq.40% by wt. of a finely divided solid in the base oil. The thickened compns. are obtained by heating 1-3 moles of amine with 2-1 moles of phosphate and 1-0.05 mole of acid in the base oil at 50-250.degree.F. with stirring. Highest yields are obtained when the amine and phosphate are added to the oil first, followed by the fatty acid. The finely divided solid may be added at any time; the finished product requires no milling. The thickening agent comprises 0.5-10% by wt. of the final compn. A preferred amine is Rosin Amine D (dehydroabietylamine 60, dihydroabietylamine 30, tetrahydroabietylamine 10%), preferred phosphates are diethyl, dilauryl, and diphenyl, the preferred fatty

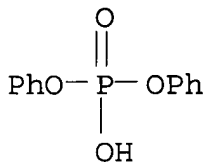
acid is oleic or its com. mixts. Base oils are silicone polymers, particularly Dow Coming 550 Silicone Fluid (phenyl methyl silicone polymer), mineral oils, synthetic hydrocarbons, polyalkylene glycols, dicarboxylic acid esters, polyfluoro org. compds., etc. Solids which may be suspended include finely divided pigments and extenders and graphite.

IT 682-49-5, Dodecyl phosphate, (C<sub>12</sub>H<sub>25</sub>O)<sub>3</sub>PO 838-85-7  
 , Phenyl phosphate, (PhO)<sub>2</sub>(HO)PO  
 (reaction products with abietylamine derivs. and oleic acid, as lubricant thixotropic additives)

RN 682-49-5 HCA  
 CN Phosphoric acid, tridodecyl ester (8CI, 9CI) (CA INDEX NAME)



RN 838-85-7 HCA  
 CN Phosphoric acid, diphenyl ester (8CI, 9CI) (CA INDEX NAME)



CC 52 (Petroleum and Petroleum Derivatives)  
 IT 682-49-5, Dodecyl phosphate, (C<sub>12</sub>H<sub>25</sub>O)<sub>3</sub>PO 838-85-7  
 , Phenyl phosphate, (PhO)<sub>2</sub>(HO)PO 7664-38-2, Phosphoric acid  
 (reaction products with abietylamine derivs. and oleic acid, as lubricant thixotropic additives)

=> d l37 1-7 cbib abs hitstr hitind

L37 ANSWER 1 OF 7 HCA COPYRIGHT 2002 ACS

134:44552 Secondary **nonaqueous electrolyte**

**batteries** and their manufacture. Takezawa, Hideharu; Bito, Yasuhiko; Matsuda, Hiromu; Toyoguchi, Yoshinori (Matsushita Electric Industrial Co., Ltd., Japan). PCT Int. Appl. WO 2000076016 A1 20001214, 39 pp. DESIGNATED STATES: W: CN, JP, KR, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2000-JP3581 20000601. PRIORITY: JP 1999-158615 19990604.

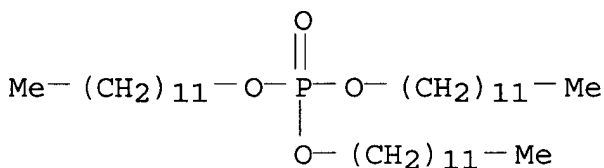
AB The **batteries** use cathodes, anodes, and/or Li salt **electrolyte** solns. contg. tri C7-12-alkyl phosphate, di C1-12-alkyl or di-aryl phosphate, and/or mono C1-12 alkyl phosphate or mono-aryl phosphate. The **batteries** are prepd. by using

an electrode active mass, active mass paste, and/or electrodes contg. the phosphate ester.

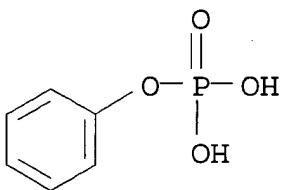
IT 682-49-5, Tridodecyl phosphate 701-64-4,  
 Monophenyl phosphate 812-00-0, Monomethyl phosphate  
 1623-06-9, Monopropyl phosphate 1623-14-9,  
 Monoethyl phosphate 1623-15-0, Monobutyl phosphate  
 1806-54-8, Trioctyl phosphate 2382-76-5,  
 Monopentyl phosphate 2627-35-2, Monododecyl phosphate  
 3900-03-6, Monoheptyl phosphate 3900-04-7,  
 Monoethyl phosphate 3921-30-0, Monodecyl phosphate  
 3991-73-9, Monoethyl phosphate 4200-55-9, Tridecyl  
 phosphate 4621-50-5, Triheptyl phosphate  
 13018-37-6, Trinonyl phosphate 36047-43-5,  
 Monononyl phosphate 36047-45-7, Monoundecyl phosphate  
 312636-94-5

(phosphate ester additives in electrodes and electrolyte solns. for secondary lithium batteries)

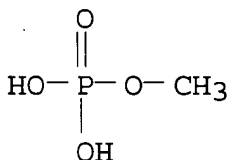
RN 682-49-5 HCA  
 CN Phosphoric acid, tridodecyl ester (8CI, 9CI) (CA INDEX NAME)



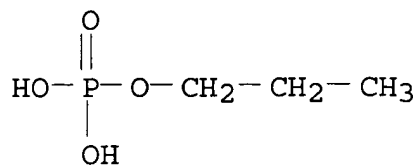
RN 701-64-4 HCA  
 CN Phosphoric acid, monophenyl ester (8CI, 9CI) (CA INDEX NAME)



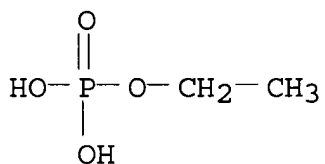
RN 812-00-0 HCA  
 CN Phosphoric acid, monomethyl ester (8CI, 9CI) (CA INDEX NAME)



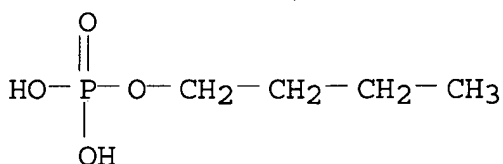
RN 1623-06-9 HCA  
 CN Phosphoric acid, monopropyl ester (7CI, 8CI, 9CI) (CA INDEX NAME)



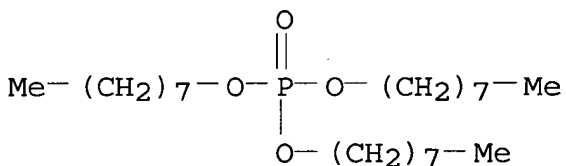
RN 1623-14-9 HCA  
 CN Phosphoric acid, monoethyl ester (8CI, 9CI) (CA INDEX NAME)



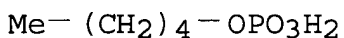
RN 1623-15-0 HCA  
 CN Phosphoric acid, monobutyl ester (8CI, 9CI) (CA INDEX NAME)



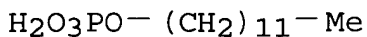
RN 1806-54-8 HCA  
 CN Phosphoric acid, trioctyl ester (8CI, 9CI) (CA INDEX NAME)



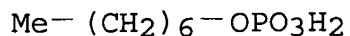
RN 2382-76-5 HCA  
 CN Phosphoric acid, monopentyl ester (8CI, 9CI) (CA INDEX NAME)



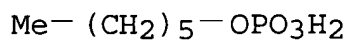
RN 2627-35-2 HCA  
 CN Phosphoric acid, monododecyl ester (8CI, 9CI) (CA INDEX NAME)



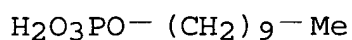
RN 3900-03-6 HCA  
 CN Phosphoric acid, monoheptyl ester (8CI, 9CI) (CA INDEX NAME)



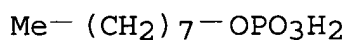
RN 3900-04-7 HCA  
 CN Phosphoric acid, monohexyl ester (8CI, 9CI) (CA INDEX NAME)



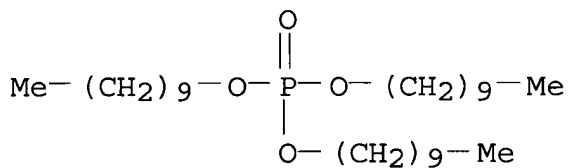
RN 3921-30-0 HCA  
 CN Phosphoric acid, monodecyl ester (8CI, 9CI) (CA INDEX NAME)



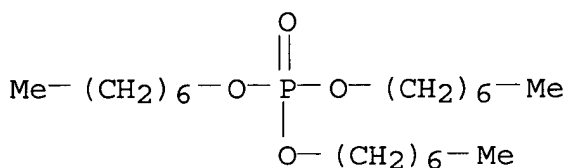
RN 3991-73-9 HCA  
 CN Phosphoric acid, mono-octyl ester (9CI) (CA INDEX NAME)



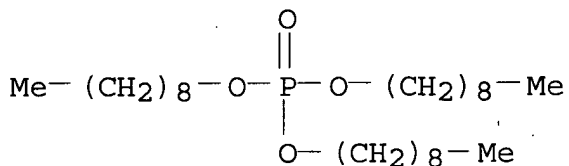
RN 4200-55-9 HCA  
 CN Phosphoric acid, tris(decyl) ester (9CI) (CA INDEX NAME)



RN 4621-50-5 HCA  
 CN Phosphoric acid, triheptyl ester (8CI, 9CI) (CA INDEX NAME)

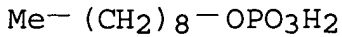


RN 13018-37-6 HCA  
 CN Phosphoric acid, trinonyl ester (8CI, 9CI) (CA INDEX NAME)

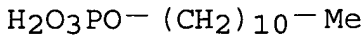




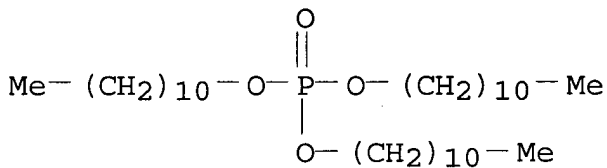
RN 36047-43-5 HCA  
 CN Phosphoric acid, monononyl ester (9CI) (CA INDEX NAME)



RN 36047-45-7 HCA  
 CN 1-Undecanol, dihydrogen phosphate (9CI) (CA INDEX NAME)



RN 312636-94-5 HCA  
 CN 1-Undecanol, phosphate (3:1) (9CI) (CA INDEX NAME)



IC ICM H01M010-40  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 ST secondary lithium **battery** phosphate ester additive  
 IT Secondary **batteries**  
 (lithium; electrodes and **electrolyte** solns. contg.  
 phosphate ester additives for secondary lithium **batteries**  
 )  
 IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate  
 7440-44-0, Carbon, uses 7791-03-9, Lithium perchlorate  
 12190-79-3, Cobalt lithium oxide (CoLiO<sub>2</sub>)  
 (electrodes and **electrolyte** solns. contg. phosphate  
 ester additives for secondary lithium **batteries**)  
 IT 107-66-4, Dibutyl phosphate 598-02-7, Diethyl phosphate  
 682-49-5, Tridodecyl phosphate 701-64-4,  
 Monophenyl phosphate 812-00-0, Monomethyl phosphate  
 813-78-5, Dimethyl phosphate 838-85-7, Diphenyl phosphate  
 1623-06-9, Monopropyl phosphate 1623-14-9,  
 Monoethyl phosphate 1623-15-0, Monobutyl phosphate  
 1804-93-9, Dipropyl phosphate 1806-54-8, Trioctyl  
 phosphate 2382-76-5, Monopentyl phosphate  
 2627-35-2, Monododecyl phosphate 3115-39-7, Dioctyl  
 phosphate 3138-42-9, Dipentyl phosphate 3138-43-0, Dinonyl  
 phosphate 3900-03-6, Monoheptyl phosphate  
 3900-04-7, Monohexyl phosphate 3900-12-7, Diheptyl  
 phosphate 3900-13-8, Dihexyl phosphate 3921-30-0,  
 Monodecyl phosphate 3991-73-9, Monooctyl phosphate  
 4200-55-9, Tridecyl phosphate 4621-50-5, Triheptyl  
 phosphate 7057-92-3, Didodecyl phosphate 7598-64-3, Diundecyl  
 phosphate 7795-87-1, Didecyl phosphate 13018-37-6,

Trinonyl phosphate 19541-53-8 **36047-43-5**, Monononyl  
 phosphate **36047-45-7**, Monoundecyl phosphate 54653-10-0  
 54653-24-6 86052-84-8 130675-91-1 130675-92-2 160087-64-9  
**312636-94-5** 312636-95-6 312636-96-7 312636-97-8  
 312636-98-9 312636-99-0  
 (phosphate ester additives in electrodes and **electrolyte**  
 solns. for secondary lithium **batteries**)

L37 ANSWER 2 OF 7 HCA COPYRIGHT 2002 ACS

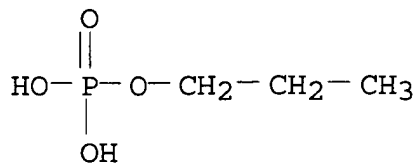
132:287557 Aluminum **electrolytic** capacitor with no flash point  
 or degradation. Tsubaki, Yuichiro; Matsuura, Hiroyuki; Morokuma,  
 Munehiro; Minato, Koichiro; Nitta, Yukihiro (Matsushita Electric  
 Industrial Co., Ltd., Japan). Eur. Pat. Appl. EP 996134 A2  
 20000426, 20 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR,  
 GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO.  
 (English). CODEN: EPXXDW. APPLICATION: EP 1999-120360 19991013.  
 PRIORITY: JP 1998-290333 19981013; JP 1999-255249 19990909.

AB The present invention aims to provide a highly reliable Al  
**electrolytic** capacitor which has no flash points and shows  
 little change or degrdn. in external appearance and properties. The  
 H2O content of **electrolytic** soln. of the  
**electrolytic** capacitor of this invention is 20-90% and one  
 or more following compds. are included as main **electrolytes**  
 in the **electrolytic** soln. ; ammonium formate, ammonium  
 acetate, ammonium lactate, ammonium glycolate, ammonium oxalate,  
 ammonium succinate, ammonium malonate, ammonium adipate, ammonium  
 benzoate, ammonium glutarate, and ammonium azelate. The  
**electrolytic** soln. also contains .gtoreq.1% of one or more  
 compds. selected from org. carboxylic acids with a particular  
 structure and ammonium salts of these org. acids. The m.p. of the  
**electrolytic** soln. is -10.degree. and under, the Cl content  
 of a sealing material of the capacitor is .ltoreq.300 ppm to the wt.  
 of the sealing material. The impedance ratio of 20.degree., 100 kHz  
 to-10.degree., 100 kHz of the Al **electrolytic** capacitor is  
 .ltoreq.4. The present invention can provide a highly reliable Al  
**electrolytic** capacitor of rated voltage of under 100 V,  
 which achieves superior impedance and low temp. properties, and has  
 little risk of ignition even when the **electrolytic** soln.  
 is released.

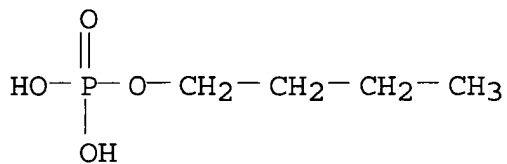
IT **1623-06-9**, Monopropyl phosphate **1623-15-0**,  
 Monobutyl phosphate **1806-54-8**, Trioctyl phosphate  
**3900-04-7**, Monohexyl phosphate **3921-30-0**,  
 Monodecyl phosphate **3991-73-9**, Monoctyl phosphate  
**4200-55-9**, Tridecyl phosphate  
 (for aluminum **electrolytic** capacitor with nobelium  
 flash point or degrdn.)

RN 1623-06-9 HCA

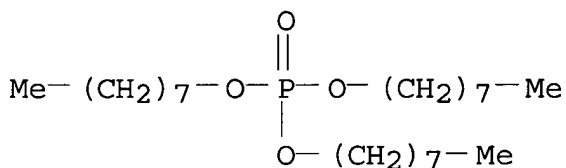
CN Phosphoric acid, monopropyl ester (7CI, 8CI, 9CI) (CA INDEX NAME)



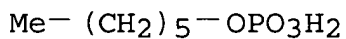
RN 1623-15-0 HCA  
 CN Phosphoric acid, monobutyl ester (8CI, 9CI) (CA INDEX NAME)



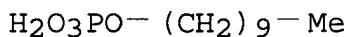
RN 1806-54-8 HCA  
 CN Phosphoric acid, trioctyl ester (8CI, 9CI) (CA INDEX NAME)



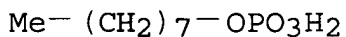
RN 3900-04-7 HCA  
 CN Phosphoric acid, monohexyl ester (8CI, 9CI) (CA INDEX NAME)



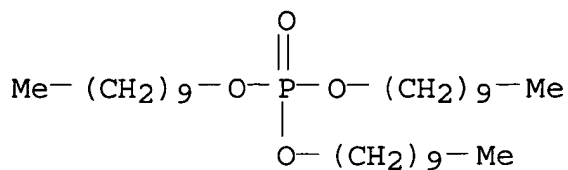
RN 3921-30-0 HCA  
 CN Phosphoric acid, monodecyl ester (8CI, 9CI) (CA INDEX NAME)



RN 3991-73-9 HCA  
 CN Phosphoric acid, mono-octyl ester (9CI) (CA INDEX NAME)



RN 4200-55-9 HCA  
 CN Phosphoric acid, tris(decyl) ester (9CI) (CA INDEX NAME)



- IC ICM H01G009-035  
 CC 76-10 (Electric Phenomena)  
 Section cross-reference(s): 38  
 ST aluminum **electrolytic** capacitor; **electrolyte**  
 ammonium carboxylate capacitor; phosphate ester **electrolytic**  
 capacitor; silicone **electrolytic** capacitor; silane  
**electrolytic** capacitor; carboxylic acid capacitor  
 IT Synthetic rubber, uses  
 (Isobutylene isopropylene; for aluminum **electrolytic**  
 capacitor with nobelium flash point or degrdn.)  
 IT Silanes  
 (alkoxy; for aluminum **electrolytic** capacitor with  
 nobelium flash point or degrdn.)  
 IT **Electrolytic** capacitors  
 (aluminum **electrolytic** capacitor with nobelium flash  
 point or degrdn.)  
 IT Carboxylic acids, uses  
 (ammonium salts; for aluminum **electrolytic** capacitor  
 with nobelium flash point or degrdn.)  
 IT **Electrolytes**  
 Sealing  
 (for aluminum **electrolytic** capacitor with nobelium  
 flash point or degrdn.)  
 IT Butyl rubber, uses  
 Carboxylic acids, uses  
 Polyoxyalkylenes, uses  
 Polysiloxanes, uses  
 Silanes  
 (for aluminum **electrolytic** capacitor with nobelium  
 flash point or degrdn.)  
 IT Alcohols, uses  
 (polyhydric; for aluminum **electrolytic** capacitor with  
 nobelium flash point or degrdn.)  
 IT Coupling agents  
 (silane; for aluminum **electrolytic** capacitor with  
 nobelium flash point or degrdn.)  
 IT Ethylene-propylene rubber  
 (terpolymer; aluminum **electrolytic** capacitor with  
 nobelium flash point or degrdn.)  
 IT 7429-90-5, Aluminum, uses  
 (aluminum **electrolytic** capacitor with nobelium flash  
 point or degrdn.)  
 IT 9010-85-9  
 (butyl rubber, for aluminum **electrolytic** capacitor with

- nobelium flash point or degrdn.)
- IT 9010-79-1  
(ethylene-propylene rubber, terpolymer; aluminum **electrolytic** capacitor with nobelium flash point or degrdn.)
- IT 62-23-7, p-Nitrobenzoic acid 78-40-0, Triethyl phosphate  
88-75-5, o-Nitrophenol 91-23-6, o-Nitroanisole 100-02-7,  
p-Nitrophenol, uses 100-17-4, p-Nitroanisole 107-21-1, Ethylene glycol, uses 111-20-6, Sebacic acid, uses 121-92-6,  
m-Nitrobenzoic acid 124-04-9D, Adipic acid, tri-Me derivs.  
512-56-1, Trimethyl phosphate 513-08-6, Tripropyl phosphate  
515-98-0, Ammonium lactate 540-69-2, Ammonium formate 552-16-9,  
o-Nitrobenzoic acid 554-84-7, m-Nitrophenol 555-03-3,  
m-Nitroanisole 598-02-7, Diethyl phosphate 631-61-8, Ammonium acetate 813-78-5, Dimethyl phosphate 1113-38-8, Ammonium oxalate **1623-06-9**, Monopropyl phosphate **1623-15-0**,  
Monobutyl phosphate 1804-93-9, Dipropyl phosphate **1806-54-8**, Trioctyl phosphate 1863-63-4, Ammonium benzoate  
2226-88-2, Ammonium succinate 2466-09-3, Pyrophosphoric acid  
2528-39-4, Trihexyl phosphate 3115-39-7 **3900-04-7**,  
Monohexyl phosphate 3900-13-8, Dihexyl phosphate **3921-30-0**  
, Monodecyl phosphate **3991-73-9**, Monooctyl phosphate **4200-55-9**, Tridecyl phosphate 6303-21-5, Hypophosphorous acid 7664-38-2D, Phosphoric acid, alkyl esters, uses 7723-14-0D, Phosphorus, org. compds., uses 7795-87-1, Didecyl phosphate 7803-65-8 9003-11-6, Ethylene oxide-propylene oxide copolymer 10347-88-3, 3-Tert-Butyladipic acid 18815-40-2, Ammonium malonate 19090-60-9, Ammonium adipate 25322-68-3, Polyethyleneglycol 29750-34-3, Ammonium glutarate 35249-89-9, Ammonium glycolate 44636-58-0 50905-10-7, Decane-1,6-dicarboxylic acid 82169-85-5, Ammonium azelate 83797-34-6 85090-57-9 88107-08-8 220208-63-9 260059-62-9 263863-41-8  
(for aluminum **electrolytic** capacitor with nobelium flash point or degrdn.)

L37 ANSWER 3 OF 7 HCA COPYRIGHT 2002 ACS

127:100973 Sealing of pinholes of gold plating on electric connectors. Fukamachi, Kazuhiko; Hatanaka, Hiroyuki (Nippon Mining Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 09170096 A2 19970630 Heisei, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-330474 19951219.

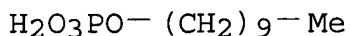
AB Au (alloy)-plated and Ni (alloy)-deposited connectors are treated by d.c. **electrolysis** at voltage E 0.1-5.0 V with the Au plating as an anode in an emulsion soln. prepd. by adding 0.01-5.0 wt.% self-emulsifier to an inhibitor aq. soln. to fill the pinholes of the Au plating. The soln. preferably contains .gtoreq.1 cyclic N compd. forming chelates with Ni or a substrate metal in total 10-1000 ppm as an inhibitor. The treated connectors show high corrosion resistance, excellent stability of elec. contacts, and improved lubricity.

IT **3921-30-0 4200-55-9**

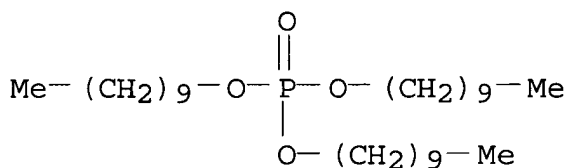
(emulsifier; sealing of gold plating pinholes on nickel-coated

connectors with emulsifier-contg. inhibitor soln. for corrosion resistance and lubricity)

RN 3921-30-0 HCA  
CN Phosphoric acid, monodecyl ester (8CI, 9CI) (CA INDEX NAME)



RN 4200-55-9 HCA  
CN Phosphoric acid, tris(decyl) ester (9CI) (CA INDEX NAME)



IC ICM C25D011-34  
ICS C23C028-00  
CC 72-6 (Electrochemistry)  
Section cross-reference(s): 56, 76  
IT 3921-30-0 4200-55-9 7795-87-1 13089-30-0  
64569-85-3 172601-11-5

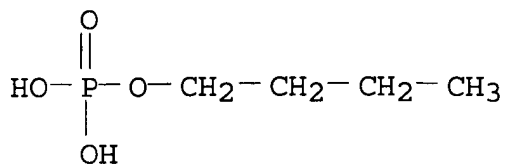
(emulsifier; sealing of gold plating pinholes on nickel-coated connectors with emulsifier-contg. inhibitor soln. for corrosion resistance and lubricity)

L37 ANSWER 4 OF 7 HCA COPYRIGHT 2002 ACS  
114:198047 **Electrolytic** solution containing phosphoric acid derivative for capacitor. Washio, Yukari; Takeishi, Nobuhiro; Shimamoto, Hideki; Mori, Keiji; Ushio, Noriki; Kishi, Takaaki; Shiono, Kazuji (Matsushita Electric Industrial Co., Ltd., Japan; Sanyo Chemical Industries, Ltd.). Jpn. Kokai Tokkyo Koho JP 02264414 A2 19901029 Heisei, 4 pp. (Japanese). CODEN: JKXXAF.  
APPLICATION: JP 1989-85452 19890404.

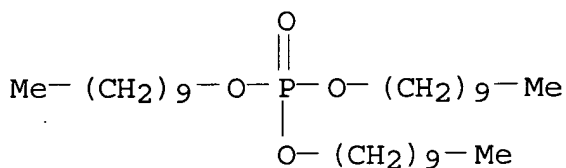
AB The title soln. contains a quaternary ammonium borate as an **electrolyte** and phosphoric acid and/or an alkyl phosphate. An **electrolytic** capacitor using a soln. comprising .gamma.-butyrolactone, Et4N borate, and monobutyl phosphate showed high spark voltage.

IT 1623-15-0, Monobutyl phosphate 4200-55-9, Tridecyl phosphate  
(**electrolytic** soln. contg., with quaternary ammonium salt **electrolyte**, for capacitor)

RN 1623-15-0 HCA  
CN Phosphoric acid, monobutyl ester (8CI, 9CI) (CA INDEX NAME)



RN 4200-55-9 HCA  
 CN Phosphoric acid, tris(decyl) ester (9CI) (CA INDEX NAME)



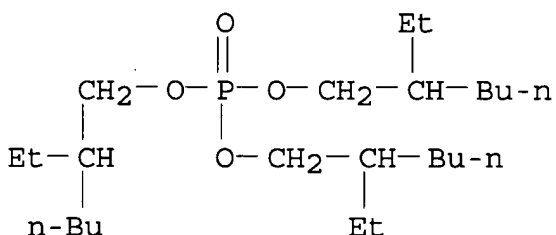
IC ICM H01G009-02  
 CC 76-10 (Electric Phenomena)  
 ST **electrolytic** soln phosphoric acid ester; quaternary ammonium borate **electrolyte** capacitor; ethylammonium borate **electrolyte electrolytic** capacitor; butyl phosphate **electrolytic** soln capacitor  
 IT Quaternary ammonium compounds, uses and miscellaneous (**electrolyte**, for **electrolytic** soln., for capacitor, phosphoric acid and/or alkyl phosphate in)  
 IT Electric capacitors (**electrolytic**, **electrolytic** soln. for, quaternary ammonium borate **electrolyte** and phosphoric acid and/or alkyl phosphate in)  
 IT 133405-81-9 133517-72-3 (**electrolyte**, for **electrolytic** soln., for capacitor, phosphoric acid and/or alkyl phosphate in)  
 IT 512-56-1, Methyl phosphate 1623-15-0, Monobutyl phosphate 4200-55-9, Tridecyl phosphate (**electrolytic** soln. contg., with quaternary ammonium salt **electrolyte**, for capacitor)  
 L37 ANSWER 5 OF 7 HCA COPYRIGHT 2002 ACS  
 104:208885 Conductive coating. Eikuchi, Kichiji; Kitamura, Hajime; Tsuchida, Michinori (Shin-Etsu Chemical Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 60226569 A2 19851111 Showa, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1984-82378 19840424.  
 AB Coatings with durable elec. cond. contain polymers, powd. Cu or alloys, and phosphate esters. Thus, a mixt. of **electrolytic** Cu powder (av. size 20 .mu.) 80, Coatax LG-542 (acrylic polymer, 43% solids) 20 (as solid), and BuOPO(OH)<sub>2</sub> 0.5 part was coated on polyester film and dried to give a film with vol. sp. resistance 0.002, 0.005, and 0.01 .OMEGA.-cm after 0, 100, and 500 h, resp., at 100.degree..  
 IT 78-42-2 1070-03-7 1623-15-0

**2627-35-2**

(in elec. conductive coatings)

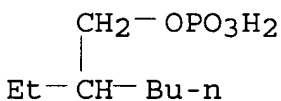
RN 78-42-2 HCA

CN Phosphoric acid, tris(2-ethylhexyl) ester (7CI, 8CI, 9CI) (CA INDEX NAME)



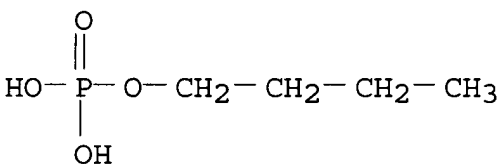
RN 1070-03-7 HCA

CN Phosphoric acid, mono(2-ethylhexyl) ester (8CI, 9CI) (CA INDEX NAME)



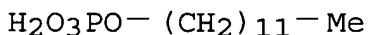
RN 1623-15-0 HCA

CN Phosphoric acid, monobutyl ester (8CI, 9CI) (CA INDEX NAME)



RN 2627-35-2 HCA

CN Phosphoric acid, monododecyl ester (8CI, 9CI) (CA INDEX NAME)



IC ICM C09D005-24

CC 42-5 (Coatings, Inks, and Related Products)

IT 78-42-2 83-86-3 107-66-4 298-07-7 838-85-7

**1070-03-7 1623-15-0 2627-35-2**

3040-56-0 4167-12-8 14260-97-0 14260-98-1 26982-05-8

29224-31-5 32435-46-4

(in elec. conductive coatings)

L37 ANSWER 6 OF 7 HCA COPYRIGHT 2002 ACS

103:162192 Analytical characterization of phosphoric ester type industrial products. Angelescu, Anca; Ionescu, Magdalena; Ponoran, Ileana; Baloiu, Liviu Mihai; Dinca, Viorica; Gusatu, Nicolae (Acad.



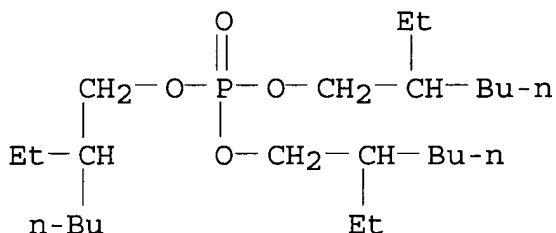
Stud. Econ., Bucharest, Rom.). Revistade Chimie (Bucharest, Romania), 36(6), 549-52 (Romanian) 1985. CODEN: RCBUAU. ISSN: 0034-7752.

AB The anal. characterization of the surface-active industrial products based on ethoxylated phosphoric esters without a previous sepn. was performed by correlating thin-layer chromatog. data with the results of potentiometric titrn. in **nonaq.** media and of IR quant. spectrophotometric data.

IT 78-42-2 1070-03-7  
(potentiometric titrn. of, as model for ethoxylated alkyl phosphate surfactants)

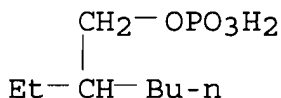
RN 78-42-2 HCA

CN Phosphoric acid, tris(2-ethylhexyl) ester (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 1070-03-7 HCA

CN Phosphoric acid, mono(2-ethylhexyl) ester (8CI, 9CI) (CA INDEX NAME)



CC 46-3 (Surface Active Agents and Detergents)

IT 78-42-2 298-07-7 1070-03-7  
(potentiometric titrn. of, as model for ethoxylated alkyl phosphate surfactants)

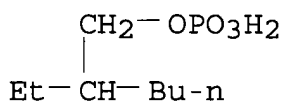
L37 ANSWER 7 OF 7 HCA COPYRIGHT 2002 ACS

64:55160 Original Reference No. 64:10345f-h Synergism of malathion and parathion against resistant insects, phosphorus esters with synergistic properties. Plapp, Frederick W., Jr.; Tong, Homer H. C. (Entomol Res. Div., U.S. Dept. of Agr., Corvallis, OR). J. Econ. Entomol., 59(1), 11-15 (English) 1966.

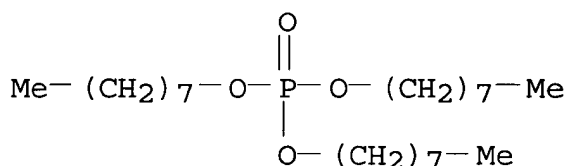
AB Many P esters were evaluated as synergists for malathion against resistant strains of the housefly, *Musca domestica*, and the mosquito *Culex tarsalis*. Several were tested as synergists for parathion against parathion-resistant houseflies. S,S,S- and O,S,S-trialkyl and mixed alkyl phosphorothioites and phosphorothioates synergized malathion and (or) parathion against both insect species. With mosquitoes, Bu-contg. esters were most effective; with flies, esters contg. iso-Pr, Pr, or Bu groups were strongly synergistic.

S,S-dialkyl O- or S-phenyl phosphorothioites also were active. O,O,O-triphenyl phosphorus compds. synergized malathion against both species; their S,S,S-triphenyl analogs were much less active. In general, tolyl and other substituted phenyl phosphates were malathion synergists against resistant mosquitoes only. The materials synergizing malathion against resistant insects differed considerably from those known to potentiate the toxicity of malathion to mice or to cause ataxia in chickens.

IT 1070-03-7, 1-Hexanol, 2-ethyl-, phosphate  
(P insecticide synergism by)  
RN 1070-03-7 HCA  
CN Phosphoric acid, mono(2-ethylhexyl) ester (8CI, 9CI) (CA INDEX NAME)



IT 1806-54-8, Octyl phosphate, (C<sub>8</sub>H<sub>17</sub>O)<sub>3</sub>PO  
(phosphorus insecticide synergism by)  
RN 1806-54-8 HCA  
CN Phosphoric acid, trioctyl ester (8CI, 9CI) (CA INDEX NAME)



CC 72 (Pesticides)  
IT 1070-03-7, 1-Hexanol, 2-ethyl-, phosphate 3862-08-6,  
Phenol, o-ethyl-, phosphate 27856-12-8, Phenol, p-methoxy-,  
phosphate 50917-36-7, Phenol, p-ethyl-, phosphate 90001-11-9,  
Phenol, m-methoxy-, phosphate  
(P insecticide synergism by)  
IT 78-32-0, p-Tolyl phosphate, (C<sub>7</sub>H<sub>7</sub>O)<sub>3</sub>PO 121-06-2, 2,6-Xylyl  
phosphate, (C<sub>8</sub>H<sub>9</sub>O)<sub>3</sub>PO 597-82-0, Phenyl phosphorothioate, (PhO)<sub>3</sub>PS  
597-83-1, Phenyl phosphorotrithioate, (PhS)<sub>3</sub>PO 1095-04-1, Phenyl  
phosphorotrithioite, (PhS)<sub>3</sub>P 1486-39-1, Ethyl phosphorotrithioate,  
(EtS)<sub>3</sub>PO 1642-44-0, Propyl phosphorotrithioate, (PrS)<sub>3</sub>PO  
1806-54-8, Octyl phosphate, (C<sub>8</sub>H<sub>17</sub>O)<sub>3</sub>PO 2510-86-3, Ethyl  
phenyl phosphate, (EtO)<sub>2</sub>(PhO)PO 3347-30-6, Ethyl  
phosphorotrithioate, (EtO)(EtS)<sub>2</sub>PS 3819-69-0, Butyl ethyl  
phosphorodithioite, (BuS)<sub>2</sub>(EtO)P 3862-11-1, 3,4-Xylyl phosphate,  
(C<sub>8</sub>H<sub>9</sub>O)<sub>3</sub>PO 3862-17-7, Phosphorodithious acid, S,S-dibutyl  
O-p-chlorophenyl ester 3862-18-8, Dodecyl phosphorotrithioate,  
(C<sub>12</sub>H<sub>25</sub>S)<sub>3</sub>PO 3871-23-6, 4-Biphenyl phosphate, (C<sub>12</sub>H<sub>9</sub>O)<sub>3</sub>PO  
3871-31-6, Phenol, p-chloro-, phosphate 3957-62-8, Methanethiol,  
trichloro-, S-ester with O,O-diiso-Pr phosphorothioate 3957-64-0,  
Hydroquinone, phosphate 12778-12-0, Phenol, p-nitro-, phosphate

13388-91-5, Phenol, m-nitro-, phosphate 13421-39-1, Phenol,  
 p-tert-butyl-, phosphate 14614-76-7, Phenol, 2,4,6-trichloro-,  
 phosphate 14614-78-9, Phenol, pentachloro-, phosphate  
 25022-72-4, Allyl phosphate 25653-16-1, 3,5-Xylyl phosphate,  
 (C8H9O)3PO 26444-49-5, Phenyl tolyl phosphate, (PhO)2(C7H7O)PO  
 100352-16-7, Cresol, .alpha.-chloro-, phosphate  
 (phosphorus insecticide synergism by)

=> d 139 1-6 cbib abs hitstr hitind

L39 ANSWER 1 OF 6 HCA COPYRIGHT 2002 ACS

137:241454 Alkyl-chain selective analysis of phosphoric acid esters with  
**non-aqueous** capillary electrophoresis. Grob,  
 Miriam; Steiner, Frank (Instrumental Analysis and Bioanalysis,  
 Saarland University, Saarbruecken, 66041, Germany). Journal of  
 Separation Science, 25(9), 615-618 (English) 2002. CODEN: JSSCCJ.  
 ISSN: 1615-9306. Publisher: Wiley-VCH Verlag GmbH.

AB **Nonaq.** capillary electrophoresis proved to be an efficient  
 technique for the anal. of phosphoric acid esters. Using an  
**electrolyte** based on N-methylformamide, short chain  
 phosphoric acid esters and water insol. long chain phosphoric acid  
 esters were analyzed simultaneously. The background  
**electrolyte** consisted of 15 mM ammonium  
 anthraquinonesulfonate as background chromophore for indirect  
 detection, 10 mM triethylamine, and 0.001% polybrene. It allowed  
 detn. of the alkyl chain length of the analytes, and distinction  
 between ethoxylated and nonethoxylated phosphoric acid esters even  
 in more complex mixts. The method enabled fast sepn. within 8 min  
 after uncomplicated sample prepn.

IT **3921-30-0D**, ethoxylated products  
 (alkyl-chain selective anal. of phosphoric acid esters by  
**nonaq.** capillary electrophoresis)

RN 3921-30-0 HCA

CN Phosphoric acid, monodecyl ester (8CI, 9CI) (CA INDEX NAME)

$\text{H}_2\text{O}_3\text{PO}-(\text{CH}_2)_9-\text{Me}$

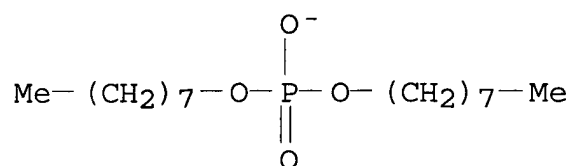
IT **45261-23-2 45300-74-1 60699-45-8**

**137910-89-5**

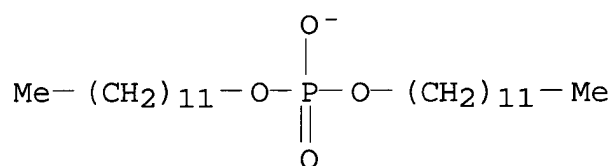
(alkyl-chain selective anal. of phosphoric acid esters by  
**nonaq.** capillary electrophoresis)

RN 45261-23-2 HCA

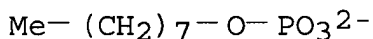
CN Phosphoric acid, dioctyl ester, ion(1-) (9CI) (CA INDEX NAME)



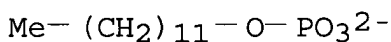
RN 45300-74-1 HCA  
 CN Phosphoric acid, didodecyl ester, ion(1-) (9CI) (CA INDEX NAME)



RN 60699-45-8 HCA  
 CN Phosphoric acid, mono-octyl ester, ion(2-) (9CI) (CA INDEX NAME)



RN 137910-89-5 HCA  
 CN Phosphoric acid, monododecyl ester, ion(2-) (9CI) (CA INDEX NAME)



CC 80-5 (Organic Analytical Chemistry)  
 ST phosphoric acid ester **nonaq** capillary electrophoresis  
 alkyl chain selective  
 IT Capillary electrophoresis  
 (alkyl-chain selective anal. of phosphoric acid esters by  
**nonaq.** capillary electrophoresis)  
 IT **3921-30-0D**, ethoxylated products  
 (alkyl-chain selective anal. of phosphoric acid esters by  
**nonaq.** capillary electrophoresis)  
 IT 7664-38-2D, Phosphoric acid, esters **45261-23-2**  
**45300-74-1** 52615-81-3 **60699-45-8** 84841-00-9  
**137910-89-5** 458526-57-3 458526-59-5 458526-66-4  
 (alkyl-chain selective anal. of phosphoric acid esters by  
**nonaq.** capillary electrophoresis)  
 IT 121-44-8, Triethylamine, analysis 28728-55-4, Polybrene  
 55922-85-5  
 (alkyl-chain selective anal. of phosphoric acid esters by  
**nonaq.** capillary electrophoresis)  
 IT 123-39-7, N-Methylformamide  
 (**electrolyte** contg.; alkyl-chain selective anal. of

phosphoric acid esters by **nonaq.** capillary electrophoresis)

L39 ANSWER 2 OF 6 HCA COPYRIGHT 2002 ACS

136:20494 **Nonaqueous** gel **electrolytes** doped with phosphoric acid esters. Zukowska, G.; Wieczorek, W.; Kedzierski, M.; Florjanczyk, Z. (Faculty of Chemistry, Warsaw University of Technology, Warsaw, 00-664, Pol.). Solid State Ionics, 144(1,2), 163-173 (English) 2001. CODEN: SSIOD3. ISSN: 0167-2738. Publisher: Elsevier Science B.V..

*date not good*

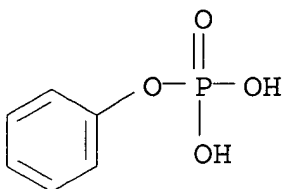
AB Highly conducting anhyd. gels doped with phosphoric acid esters were obtained by entrapping ester solns. in polar aprotic solvents into poly(vinylidene fluoride) or poly(Me methacrylate) matrixes. The phys.-chem. properties of the gels were studied as a function of type and concn. of proton donor and solvent. Use of 5-40% propylene carbonate / N,N-dimethylformamide solvent mixt. led to transparent gels. The cond. of the gels was 5 .times. 10<sup>-4</sup> S cm<sup>-1</sup> (PVdF-based systems) and 1 .times. 10<sup>-3</sup> S cm<sup>-1</sup> (PMMA-based gels). The mechanism of proton conduction was studied from impedance spectroscopy and PFG NMR data.

IT **701-64-4**, Monophenyl phosphate **838-85-7**, Diphenyl phosphate

(proton cond. of **nonaq.** gel **electrolytes** as function of phosphoric acid ester content and solvent type)

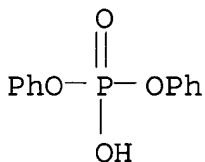
RN 701-64-4 HCA

CN Phosphoric acid, monophenyl ester (8CI, 9CI) (CA INDEX NAME)



RN 838-85-7 HCA

CN Phosphoric acid, diphenyl ester (8CI, 9CI) (CA INDEX NAME)



CC 37-5 (Plastics Manufacture and Processing)

Section cross-reference(s): 76

ST phosphoric acid ester polyvinylidene fluoride gel **electrolyte**; polymethyl methacrylate phosphoric acid ester **nonaq** gel; cond proton gel polymer phosphoric acid ester

IT Glass transition temperature  
Polymer **electrolytes**

Protonation

Xerogels

(proton cond. of **nonaq.** gel **electrolytes** as function of phosphoric acid ester content and solvent type)

IT Fluoropolymers, properties

(proton cond. of **nonaq.** gel **electrolytes** as function of phosphoric acid ester content and solvent type)

IT Ionic conductivity

(proton; proton cond. of **nonaq.** gel **electrolytes** as function of phosphoric acid ester content and solvent type)

IT 68-12-2, N,N-Dimethylformamide, properties 108-32-7, Propylene carbonate

(gel solvent mixt.; proton cond. of **nonaq.** gel **electrolytes** as function of phosphoric acid ester content and solvent type)

IT 701-64-4, Monophenyl phosphate 838-85-7, Diphenyl phosphate 7664-38-2, Orthophosphoric acid, properties 9011-14-7, Poly(methyl methacrylate) 13421-39-1, p-tert-Butylphenyl phosphate 21150-89-0, Bis(4-tert-butylphenyl) phosphate 24937-79-9, Poly(vinylidene fluoride) 170944-38-4, 5,11,17,23-Tetra-p-tert-butyl-25-dihydrogen phosphate-.mu.-26,27,28-phosphate calix[4]arene 192517-26-3, 5,11,17,23-Tetra-p-tert-butyl-25-hydroxy-28-dihydrogen phosphate-.mu.-26,27-hydrogen phosphate calix[4]arene

(proton cond. of **nonaq.** gel **electrolytes** as function of phosphoric acid ester content and solvent type)

L39 ANSWER 3 OF 6 HCA COPYRIGHT 2002 ACS

134:44552 Secondary **nonaqueous electrolyte**

**batteries** and their manufacture. Takezawa, Hideharu; Bito, Yasuhiko; Matsuda, Hiromu; Toyoguchi, Yoshinori (Matsushita Electric Industrial Co., Ltd., Japan). PCT Int. Appl. WO 2000076016 A1 20001214, 39 pp. DESIGNATED STATES: W: CN, JP, KR, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2000-JP3581 20000601. PRIORITY: JP 1999-158615 19990604.

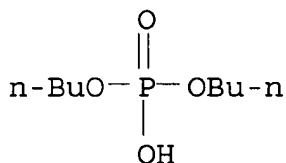
AB The **batteries** use cathodes, anodes, and/or Li salt **electrolyte** solns. contg. tri C7-12-alkyl phosphate, di C1-12-alkyl or di-aryl phosphate, and/or mono C1-12 alkyl phosphate or mono-aryl phosphate. The **batteries** are prepd. by using an electrode active mass, active mass paste, and/or electrodes contg. the phosphate ester.

IT 107-66-4, Dibutyl phosphate 598-02-7, Diethyl phosphate 701-64-4, Monophenyl phosphate 812-00-0, Monomethyl phosphate 813-78-5, Dimethyl phosphate 838-85-7, Diphenyl phosphate 1623-06-9, Monopropyl phosphate 1623-14-9, Monoethyl phosphate 1623-15-0, Monobutyl phosphate 1804-93-9, Dipropyl phosphate 2382-76-5, Monopentyl phosphate 2627-35-2, Monododecyl phosphate 3115-39-7, Dioctyl phosphate 3138-42-9, Dipentyl phosphate 3138-43-0, Dinonyl phosphate 3900-03-6, Monoheptyl phosphate

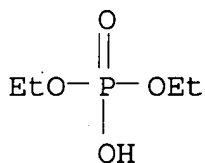
3900-04-7, Monoethyl phosphate 3900-12-7, Diheptyl phosphate 3900-13-8, Dihexyl phosphate 3921-30-0, Monodecyl phosphate 3991-73-9, Monoethyl phosphate 7057-92-3, Didodecyl phosphate 7598-64-3, Diundecyl phosphate 7795-87-1, Didecyl phosphate 19541-53-8 36047-43-5, Monononyl phosphate 36047-45-7, Monoundecyl phosphate 54653-10-0 54653-24-6 86052-84-8 130675-91-1 130675-92-2 160087-64-9 312636-95-6 312636-96-7 312636-97-8 312636-98-9 312636-99-0

(phosphate ester additives in electrodes and **electrolyte** solns. for secondary lithium **batteries**)

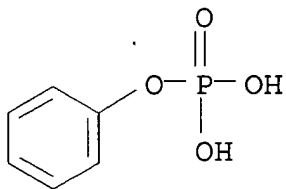
RN 107-66-4 HCA  
CN Phosphoric acid, dibutyl ester (8CI, 9CI) (CA INDEX NAME)



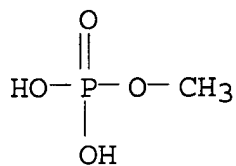
RN 598-02-7 HCA  
CN Phosphoric acid, diethyl ester (8CI, 9CI) (CA INDEX NAME)



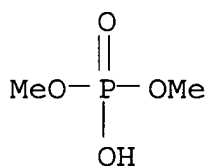
RN 701-64-4 HCA  
CN Phosphoric acid, monophenyl ester (8CI, 9CI) (CA INDEX NAME)



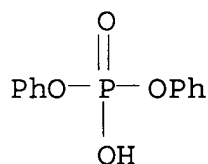
RN 812-00-0 HCA  
CN Phosphoric acid, monomethyl ester (8CI, 9CI) (CA INDEX NAME)



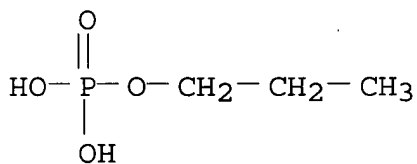
RN 813-78-5 HCA  
 CN Phosphoric acid, dimethyl ester (8CI, 9CI) (CA INDEX NAME)



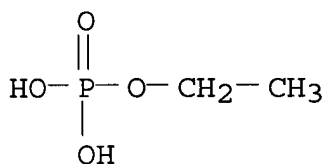
RN 838-85-7 HCA  
 CN Phosphoric acid, diphenyl ester (8CI, 9CI) (CA INDEX NAME)



RN 1623-06-9 HCA  
 CN Phosphoric acid, monopropyl ester (7CI, 8CI, 9CI) (CA INDEX NAME)

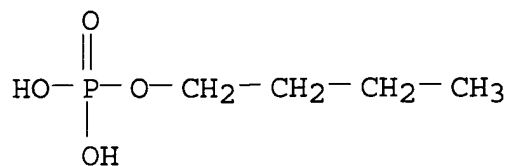


RN 1623-14-9 HCA  
 CN Phosphoric acid, monoethyl ester (8CI, 9CI) (CA INDEX NAME)

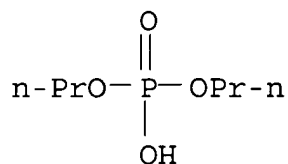


RN 1623-15-0 HCA  
 CN Phosphoric acid, monobutyl ester (8CI, 9CI) (CA INDEX NAME)

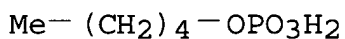




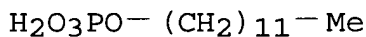
RN 1804-93-9 HCA  
 CN Phosphoric acid, dipropyl ester (8CI, 9CI) (CA INDEX NAME)



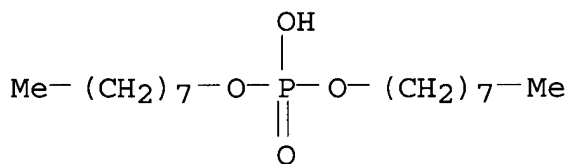
RN 2382-76-5 HCA  
 CN Phosphoric acid, monopentyl ester (8CI, 9CI) (CA INDEX NAME)



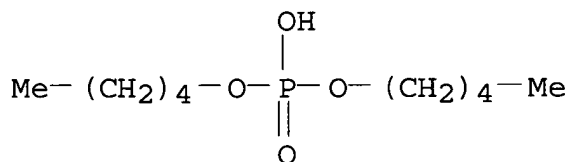
RN 2627-35-2 HCA  
 CN Phosphoric acid, monododecyl ester (8CI, 9CI) (CA INDEX NAME)



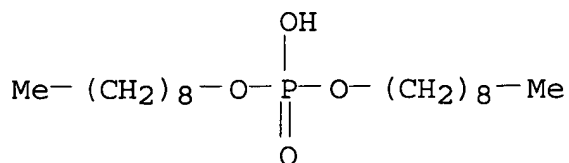
RN 3115-39-7 HCA  
 CN Phosphoric acid, dioctyl ester (8CI, 9CI) (CA INDEX NAME)



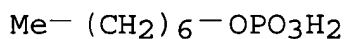
RN 3138-42-9 HCA  
 CN Phosphoric acid, dipentyl ester (8CI, 9CI) (CA INDEX NAME)



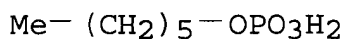
RN 3138-43-0 HCA  
 CN Phosphoric acid, dinonyl ester (8CI, 9CI) (CA INDEX NAME)



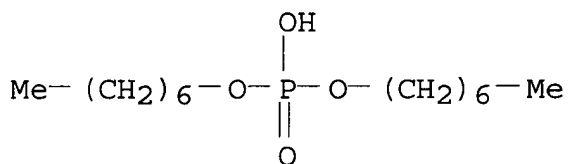
RN 3900-03-6 HCA  
 CN Phosphoric acid, monoheptyl ester (8CI, 9CI) (CA INDEX NAME)



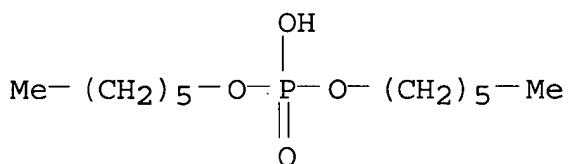
RN 3900-04-7 HCA  
 CN Phosphoric acid, monohexyl ester (8CI, 9CI) (CA INDEX NAME)



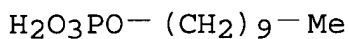
RN 3900-12-7 HCA  
 CN Phosphoric acid, diheptyl ester (8CI, 9CI) (CA INDEX NAME)



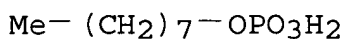
RN 3900-13-8 HCA  
 CN Phosphoric acid, dihexyl ester (8CI, 9CI) (CA INDEX NAME)



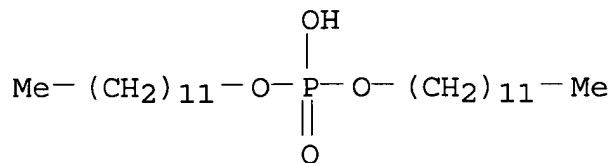
RN 3921-30-0 HCA  
 CN Phosphoric acid, monodecyl ester (8CI, 9CI) (CA INDEX NAME)



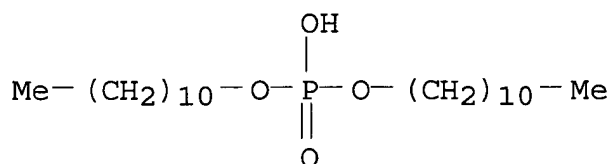
RN 3991-73-9 HCA  
 CN Phosphoric acid, mono-octyl ester (9CI) (CA INDEX NAME)



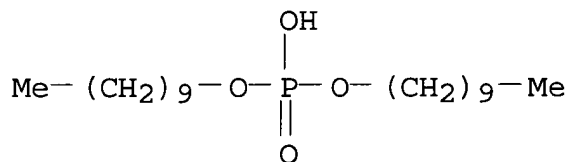
RN 7057-92-3 HCA  
 CN Phosphoric acid, didodecyl ester (8CI, 9CI) (CA INDEX NAME)



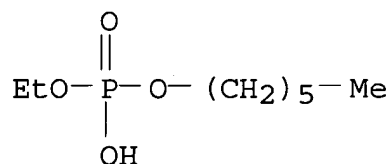
RN 7598-64-3 HCA  
 CN 1-Undecanol, hydrogen phosphate (9CI) (CA INDEX NAME)



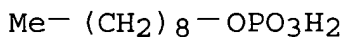
RN 7795-87-1 HCA  
 CN Phosphoric acid, didecyl ester (8CI, 9CI) (CA INDEX NAME)



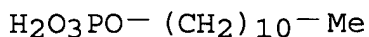
RN 19541-53-8 HCA  
 CN Phosphoric acid, monoethyl monoheptyl ester (9CI) (CA INDEX NAME)



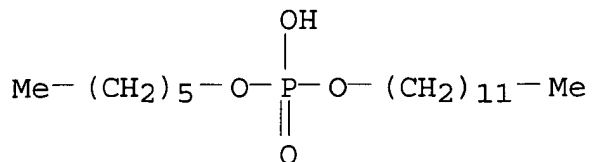
RN 36047-43-5 HCA  
 CN Phosphoric acid, monononyl ester (9CI) (CA INDEX NAME)



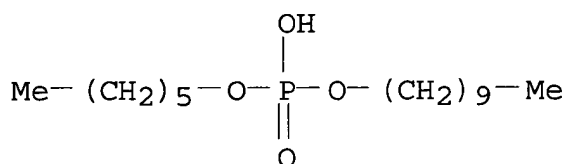
RN 36047-45-7 HCA  
 CN 1-Undecanol, dihydrogen phosphate (9CI) (CA INDEX NAME)



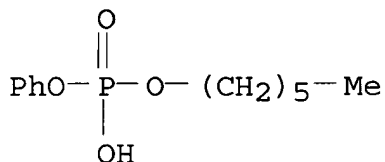
RN 54653-10-0 HCA  
 CN Phosphoric acid, monododecyl monoethyl ester (9CI) (CA INDEX NAME)



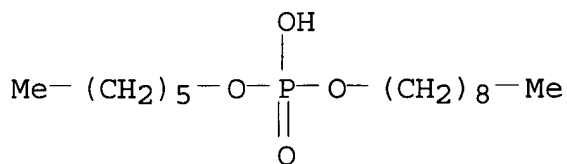
RN 54653-24-6 HCA  
 CN Phosphoric acid, monodecyl monoethyl ester (9CI) (CA INDEX NAME)



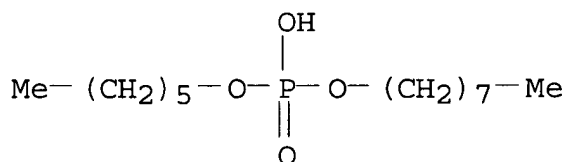
RN 86052-84-8 HCA  
 CN Phosphoric acid, monoethyl monophenyl ester (9CI) (CA INDEX NAME)



RN 130675-91-1 HCA  
 CN Phosphoric acid, monoethyl monononyl ester (9CI) (CA INDEX NAME)

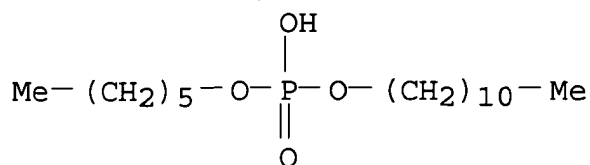


RN 130675-92-2 HCA  
 CN Phosphoric acid, monoethyl monoethyl ester (9CI) (CA INDEX NAME)



RN 160087-64-9 HCA  
 CN Phosphoric acid, monobutyl monoethyl ester (9CI) (CA INDEX NAME)





- IC ICM H01M010-40  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 ST secondary lithium **battery** phosphate ester additive  
 IT Secondary **batteries**  
 (lithium; electrodes and **electrolyte** solns. contg. phosphate ester additives for secondary lithium **batteries**)
- IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 7440-44-0, Carbon, uses 7791-03-9, Lithium perchlorate 12190-79-3, Cobalt lithium oxide (CoLiO<sub>2</sub>)  
 (electrodes and **electrolyte** solns. contg. phosphate ester additives for secondary lithium **batteries**)
- IT 107-66-4, Dibutyl phosphate 598-02-7, Diethyl phosphate 682-49-5, Tridodecyl phosphate 701-64-4, Monophenyl phosphate 812-00-0, Monomethyl phosphate 813-78-5, Dimethyl phosphate 838-85-7, Diphenyl phosphate 1623-06-9, Monopropyl phosphate 1623-14-9, Monoethyl phosphate 1623-15-0, Monobutyl phosphate 1804-93-9, Dipropyl phosphate 1806-54-8, Trioctyl phosphate 2382-76-5, Monopentyl phosphate 2627-35-2, Monododecyl phosphate 3115-39-7, Dioctyl phosphate 3138-42-9, Dipentyl phosphate 3138-43-0, Dinonyl phosphate 3900-03-6, Monoheptyl phosphate 3900-04-7, Monohexyl phosphate 3900-12-7, Diheptyl phosphate 3900-13-8, Dihexyl phosphate 3921-30-0, Monodecyl phosphate 3991-73-9, Monooctyl phosphate 4200-55-9, Tridecyl phosphate 4621-50-5, Triheptyl phosphate 7057-92-3, Didodecyl phosphate 7598-64-3, Diundecyl phosphate 7795-87-1, Didecyl phosphate 13018-37-6, Trinonyl phosphate 19541-53-8, 36047-43-5, Monononyl phosphate 36047-45-7, Monoundecyl phosphate 54653-10-0 54653-24-6 86052-84-8 130675-91-1 130675-92-2 160087-64-9 312636-94-5 312636-95-6 312636-96-7 312636-97-8 312636-98-9 312636-99-0  
 (phosphate ester additives in electrodes and **electrolyte** solns. for secondary lithium **batteries**)

L39 ANSWER 4 OF 6 HCA COPYRIGHT 2002 ACS  
 133:323991 Phosphate additives for **nonaqueous electrolyte** in rechargeable lithium ion **batteries**.  
 Gan, Hong; Takeuchi, Esther S. (Wilson Greatbatch Ltd., USA). Eur.

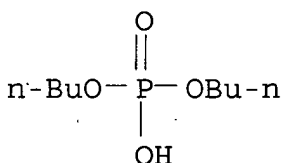
Pat. Appl. EP 1050916 A1 20001108, 14 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 2000-303719 20000503. PRIORITY: US 1999-303877 19990503.

AB In a lithium ion **electrochem. cell** having high charge/discharge capacity, long cycle life and exhibiting a reduced first cycle irreversible capacity, at least one phosphate additive is added to an **electrolyte** comprising an alkali metal salt dissolved in a solvent mixt. that includes ethylene carbonate, di-Me carbonate, ethylmethyl carbonate and di-Et carbonate. The phosphate additive has the formula: (R1O)P(:O)(OR2)(OR3) and wherein if R1, R2, and R3 are the same or different and may represent a H atom or a satd. or unsatd. org. group contg. 1-13 C atoms and wherein R1, R2, and R3 are not H, at least one of them is CR4R5R6 wherein R4 is an arom. substituent or an unsatd. org. or inorg. group and R5 and R6 are the same or different and may represent a H atom or a satd. or unsatd. org. or inorg. group; with the proviso that the phosphate additive is not dibenzyl phosphate. The preferred additive is an alkyl phosphate compd.

IT 107-66-4, Dibutylphosphate 598-02-7, Diethyl phosphate 701-64-4, Monophenyl phosphate 812-00-0, Monomethyl phosphate 813-78-5, Dimethyl phosphate 838-85-7, Diphenyl phosphate 1623-06-9, Monopropyl phosphate 1623-14-9, Monoethyl phosphate 1623-15-0, Monobutyl phosphate 1804-93-9, Dipropyl phosphate (phosphate additives for **nonaq. electrolyte** in rechargeable lithium ion **batteries**)

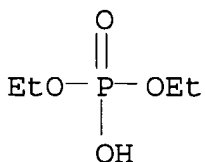
RN 107-66-4 HCA

CN Phosphoric acid, dibutyl ester (8CI, 9CI) (CA INDEX NAME)



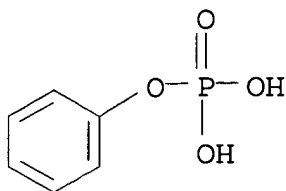
RN 598-02-7 HCA

CN Phosphoric acid, diethyl ester (8CI, 9CI) (CA INDEX NAME)

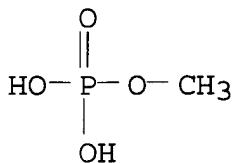


RN 701-64-4 HCA

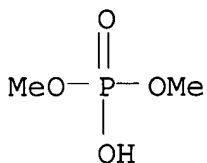
CN Phosphoric acid, monophenyl ester (8CI, 9CI) (CA INDEX NAME)



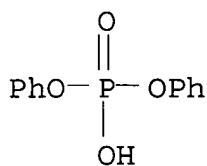
RN 812-00-0 HCA  
 CN Phosphoric acid, monomethyl ester (8CI, 9CI) (CA INDEX NAME)



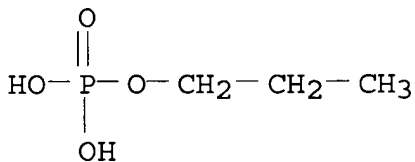
RN 813-78-5 HCA  
 CN Phosphoric acid, dimethyl ester (8CI, 9CI) (CA INDEX NAME)



RN 838-85-7 HCA  
 CN Phosphoric acid, diphenyl ester (8CI, 9CI) (CA INDEX NAME)

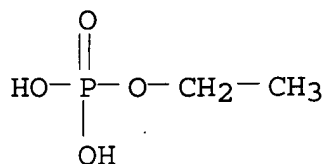


RN 1623-06-9 HCA  
 CN Phosphoric acid, monopropyl ester (7CI, 8CI, 9CI) (CA INDEX NAME)

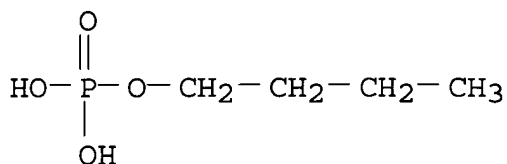


RN 1623-14-9 HCA  
 CN Phosphoric acid, monoethyl ester (8CI, 9CI) (CA INDEX NAME)

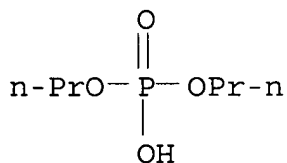




RN 1623-15-0 HCA  
 CN Phosphoric acid, monobutyl ester (8CI, 9CI) (CA INDEX NAME)



RN 1804-93-9 HCA  
 CN Phosphoric acid, dipropyl ester (8CI, 9CI) (CA INDEX NAME)



IC ICM H01M010-40  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 ST lithium **battery electrolyte** phosphate additive  
 IT Secondary **batteries**  
     (lithium; phosphate additives for **nonaq. electrolyte** in rechargeable lithium ion **batteries**)  
 IT **Battery electrolytes**  
     (phosphate additives for **nonaq. electrolyte** in rechargeable lithium ion **batteries**)  
 IT Alkali metals, uses  
     Carbon black, uses  
     Carbon fibers, uses  
     Coke  
     (phosphate additives for **nonaq. electrolyte** in rechargeable lithium ion **batteries**)  
 IT Fluoropolymers, uses  
     (phosphate additives for **nonaq. electrolyte** in rechargeable lithium ion **batteries**)  
 IT 7440-44-0, Carbon, uses  
     (glassy; phosphate additives for **nonaq. electrolyte** in rechargeable lithium ion **batteries**)  
 IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate

108-32-7, Propylene carbonate 556-65-0, Lithium thiocyanate  
 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate  
 623-96-1, Dipropyl carbonate 872-36-6, Vinylene carbonate  
 2923-17-3 2923-20-8 4437-85-8, Butylene carbonate 7439-93-2,  
 Lithium, uses 7782-42-5, Graphite, uses 7790-69-4, Lithium  
 nitrate 7791-03-9, Lithium perchlorate 11113-67-0, Iron Lithium  
 oxide 11126-15-1, Lithium vanadium oxide 12031-63-9, Lithium  
 niobium oxide (LiNbO<sub>3</sub>) 12190-79-3, Cobalt lithium oxide colio<sub>2</sub>  
 12680-08-9, Lithium titanium sulfide 13453-75-3, Lithium  
 fluorosulfate 14024-11-4, Lithium tetrachloroaluminate  
 14283-07-9, Lithium tetrafluoroborate 14485-20-2, Lithium  
 tetraphenylborate 15955-98-3, Lithium tetrachlorogallate  
 18424-17-4, Lithium hexafluoroantimonate 21324-40-3, Lithium  
 hexafluorophosphate 29935-35-1, Lithium hexafluoroarsenate  
 33454-82-9, Lithium triflate 35363-40-7, Ethyl propyl carbonate  
 37296-91-6, Lithium molybdenum oxide 37367-96-7, Lithium  
 molybdenum sulfide 39300-70-4, Lithium nickel oxide 39302-37-9,  
 Lithium titanium oxide 39457-42-6, Lithium manganese oxide  
 51177-06-1, Chromium Lithium oxide 52627-24-4, Cobalt Lithium  
 oxide 56321-19-8, Lithium niobium sulfide 56525-42-9, Methyl  
 propyl carbonate 61673-65-2, Lithium niobium selenide  
 61673-69-6, Lithium titanium selenide 61673-70-9, Lithium titanium  
 telluride 61673-71-0, Lithium vanadium selenide 74245-06-0,  
 Lithium vanadium sulfide 80341-49-7, Iron Lithium sulfide  
 90076-65-6 96352-80-6, Lithium molybdenum selenide 96352-81-7,  
 Lithium molybdenum telluride 103288-79-5, Cobalt Lithium sulfide  
 104708-77-2, Copper Lithium oxide 115028-88-1 132404-42-3  
 148884-75-7, Cobalt Lithium selenide 264142-74-7, Lithium vanadium  
 telluride 264142-75-8, Chromium Lithium sulfide 264142-76-9,  
 Chromium Lithium selenide 264142-77-0, Chromium Lithium telluride  
 264142-78-1, Copper Lithium sulfide 264142-79-2, Copper Lithium  
 selenide 264142-81-6, Lithium niobium telluride 264142-82-7,  
 Iron Lithium selenide 264142-83-8, Iron Lithium telluride  
 264142-84-9, Lithium nickel sulfide 264142-85-0, Lithium nickel  
 selenide 264142-86-1, Lithium nickel telluride 264142-87-2,  
 Cobalt Lithium telluride 264142-88-3, Lithium manganese sulfide  
 264142-89-4, Lithium manganese selenide 264142-90-7, Lithium  
 manganese telluride

(phosphate additives for **nonaq. electrolyte**  
 in rechargeable lithium ion **batteries**)

IT 107-66-4, Dibutylphosphate 598-02-7, Diethyl  
 phosphate 701-64-4, Monophenyl phosphate 812-00-0  
 , Monomethyl phosphate 813-78-5, Dimethyl phosphate  
 838-85-7, Diphenyl phosphate 884-90-2, Phosphoric acid,  
 benzyl Diethyl ester 1623-06-9, Monopropyl phosphate  
 1623-07-0, Benzyl phosphate 1623-14-9, Monoethyl phosphate  
 1623-15-0, Monobutyl phosphate 1707-92-2, Tribenzyl  
 phosphate 1804-93-9, Dipropyl phosphate 3066-75-9  
 7748-09-6, Diallyl phosphate 10497-05-9,  
 Tris(trimethylsilyl)phosphate 28519-15-5, Phosphoric acid, benzyl  
 dibutyl ester 32636-65-0, Diethyl Diphenylmethyl phosphate  
 67293-73-6, Phosphoric acid, dimethyl phenylmethyl ester

269402-58-6, Phosphoric acid, phenylmethyl Dipropyl ester  
(phosphate additives for **nonaq. electrolyte**  
in rechargeable lithium ion **batteries**)

L39 ANSWER 5 OF 6 HCA COPYRIGHT 2002 ACS

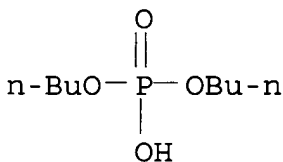
132:350275 Alkali metal **electrochemical cell** having  
an improved cathode activated with a **nonaqueous**  
**electrolyte** having a passivation inhibitor additive.  
Takeuchi, Esther S.; Leising, Randolph A.; Gan, Hong (Wilson  
Greatbatch Ltd., USA). Eur. Pat. Appl. EP 1005098 A2 20000531, 18  
pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT,  
LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN:  
EPXXDW. APPLICATION: EP 1999-308910 19991109. PRIORITY: US  
1998-200304 19981125.

AB The present invention is directed to an unexpected benefit in a  
lithium cell which may be derived from using a combination of silver  
vanadium oxide prep. in a temp. range of 450.degree. to 500.degree.  
activated with a **nonaq. electrolyte** having a  
passivation inhibitor additive selected from a nitrite, a nitrate, a  
carbonate, a dicarbonate, a phosphonate, a phosphate, a sulfate and  
hydrogen fluoride, and mixts. thereof. The benefits may include  
addnl. **battery** life resulting from a redn. in voltage  
delay and RDC build-up. A preferred **electrolyte** is 1M  
LiAsF<sub>6</sub> in a 50:50 mixt., by vol.; of PC and DME having dibenzyl  
carbonate added therein.

IT 107-66-4 598-02-7, Diethyl phosphate  
701-64-4, Mono-phenyl phosphate 812-00-0,  
Mono-methyl phosphate 813-78-5, Dimethyl phosphate  
838-85-7, Diphenyl phosphate 1623-06-9,  
Mono-propyl phosphate 1623-14-9, Mono-ethyl phosphate  
1623-15-0, Mono-butyl phosphate 1804-93-9,  
Dipropyl phosphate  
(alkali metal **battery** having improved cathode activated  
with **nonaq. electrolyte** having passivation  
inhibitor additive)

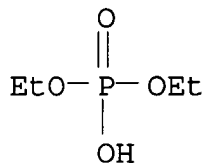
RN 107-66-4 HCA

CN Phosphoric acid, dibutyl ester (8CI, 9CI) (CA INDEX NAME)

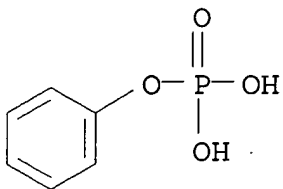


RN 598-02-7 HCA

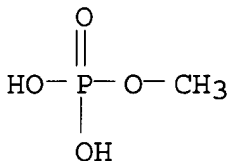
CN Phosphoric acid, diethyl ester (8CI, 9CI) (CA INDEX NAME)



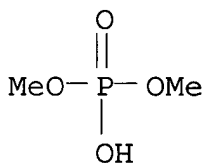
RN 701-64-4 HCA  
 CN Phosphoric acid, monophenyl ester (8CI, 9CI) (CA INDEX NAME)



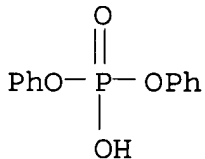
RN 812-00-0 HCA  
 CN Phosphoric acid, monomethyl ester (8CI, 9CI) (CA INDEX NAME)



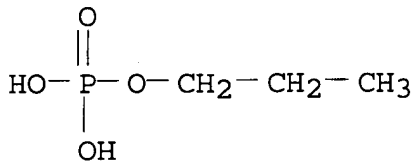
RN 813-78-5 HCA  
 CN Phosphoric acid, dimethyl ester (8CI, 9CI) (CA INDEX NAME)



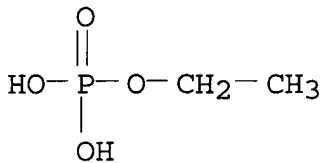
RN 838-85-7 HCA  
 CN Phosphoric acid, diphenyl ester (8CI, 9CI) (CA INDEX NAME)



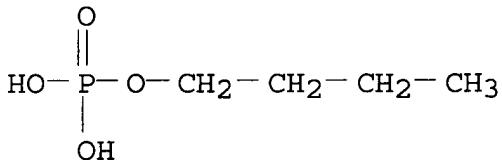
RN 1623-06-9 HCA  
 CN Phosphoric acid, monopropyl ester (7CI, 8CI, 9CI) (CA INDEX NAME)



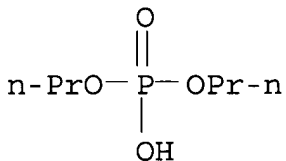
RN 1623-14-9 HCA  
 CN Phosphoric acid, monoethyl ester (8CI, 9CI) (CA INDEX NAME)



RN 1623-15-0 HCA  
 CN Phosphoric acid, monobutyl ester (8CI, 9CI) (CA INDEX NAME)



RN 1804-93-9 HCA  
 CN Phosphoric acid, dipropyl ester (8CI, 9CI) (CA INDEX NAME)



IC ICM H01M006-16  
 ICS H01M004-48  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 ST **battery** cathode passivation inhibitor additive  
 IT Air  
     **Battery** cathodes  
     (alkali metal **battery** having improved cathode activated with **nonaq. electrolyte** having passivation inhibitor additive)  
 IT Transition metal chalcogenides  
     (alkali metal **battery** having improved cathode activated with **nonaq. lectrolyte** having passivation inhibitor additive)  
 IT 1313-13-9, Manganese dioxide, uses 1313-99-1, Nickel oxide nio,

uses 1344-70-3, Copper oxide 7439-93-2, Lithium, uses  
 11104-61-3, Cobalt oxide 11105-02-5, Silver vanadium oxide  
 11115-78-9, Copper sulfide 11126-12-8, Iron sulfide 12039-13-3,  
 Titanium disulfide 12068-85-8, Iron disulfide 12789-09-2, Copper  
 vanadium oxide 181183-66-4, Copper silver vanadium oxide  
 (alkali metal **battery** having improved cathode activated  
 with **nonaq. electrolyte** having passivation  
 inhibitor additive)

IT 67-68-5, DmsO, uses 68-12-2, Dmf, uses 75-05-8, Acetonitrile,  
 uses 79-20-9, Methyl acetate 96-48-0, .gamma.-Butyrolactone  
 96-49-1, Ethylene carbonate 105-58-8 108-20-3, Diisopropyl ether  
 108-29-2, .gamma.-Valerolactone 108-32-7, Propylene carbonate  
 109-99-9, uses 110-71-4, 1,2-Dimethoxyethane 111-96-6  
 112-49-2, Triglyme 127-19-5, Dimethyl acetamide 143-24-8,  
 Tetraglyme 556-65-0, Lithium thiocyanate 616-38-6, Dimethyl  
 carbonate 623-53-0, Ethyl methyl carbonate 623-96-1, Dipropyl  
 carbonate 629-14-1, 1,2-Diethoxyethane 2923-17-3 2923-20-8  
 4437-85-8, Butylene carbonate 5137-45-1, 1-Ethoxy-2-methoxyethane  
 7790-69-4, Lithium nitrate 7791-03-9 13453-75-3, Lithium  
 fluorosulfate 14024-11-4, Lithium tetrachloroaluminate  
 14283-07-9, Lithium tetrafluoroborate 14485-20-2, Lithium  
 tetraphenylborate 15955-98-3, Lithium tetrachlorogallate  
 18424-17-4, Lithium hexafluoroantimonate 21324-40-3, Lithium  
 hexafluorophosphate 29935-35-1, Lithium hexafluoroarsenate  
 30207-69-3, -Methylpyrrolidinone 33454-82-9, Lithium triflate  
 35363-40-7, Ethyl propyl carbonate 56525-42-9, Methyl propyl  
 carbonate 90076-65-6 132404-42-3  
 (alkali metal **battery** having improved cathode activated  
 with **nonaq. electrolyte** having passivation  
 inhibitor additive)

IT 57-52-3, Bis(triethyltin)sulfate 64-67-5, Diethyl sulfate  
 77-78-1, Dimethyl sulfate **107-66-4** 109-95-5, Ethyl  
 nitrite 540-80-7, tert-Butyl nitrite 541-42-4, Isopropyl nitrite  
 542-56-3, Isobutyl nitrite 543-29-3, Isobutyl nitrate 543-67-9,  
 Propyl nitrite 544-16-1, Butyl nitrite **598-02-7**, Diethyl  
 phosphate 598-05-0, Dipropyl sulfate 624-91-9, Methyl nitrite  
 625-22-9, Dibutyl sulfate 627-13-4, Propyl nitrate 683-08-9,  
 Diethyl methyl phosphonate **701-64-4**, Mono-phenyl phosphate  
 756-79-6, Dimethyl methyl phosphonate 762-04-9, Diethyl  
 phosphonate 773-47-7, Dimethyl benzylphosphonate **812-00-0**  
 , Mono-methyl phosphate **813-78-5**, Dimethyl phosphate  
**838-85-7**, Diphenyl phosphate 868-85-9, Dimethyl  
 phosphonate 884-90-2, Phosphoric acid, diethyl phenylmethyl ester  
 926-05-6, tert-Butyl nitrate 928-45-0, Butyl nitrate 935-05-7,  
 Benzyl nitrite 1469-70-1, Allyl ethyl carbonate 1610-33-9, Ethyl  
 methyl phosphonate **1623-06-9**, Mono-propyl phosphate  
 1623-07-0, Benzyl phosphate 1623-08-1, Dibenzyl phosphate  
**1623-14-9**, Mono-ethyl phosphate **1623-15-0**,  
 Mono-butyl phosphate 1707-92-2, Tribenzyl phosphate 1712-64-7,  
 Isopropyl nitrate **1804-93-9**, Dipropyl phosphate  
 1809-19-4, Dibutyl phosphonate 1809-21-8, Dipropyl phosphonate  
 2104-20-3, Phenyl nitrate 2404-73-1, Dibutyl methyl phosphonate

2649-11-8, Didodecyl sulfate 3066-75-9, Phosphoric acid, diethyl  
 2-propenyl, ester 3459-92-5, Dibenzyl carbonate 4074-56-0,  
 Diphenyl sulfate 4427-92-3, 4-Phenyl-1,3-dioxolan-2-one  
 4712-55-4, Diphenyl phosphonate 5944-45-6, Dicarbonic acid, methyl  
 2-propenyl ester 5944-47-8, Dicarbonic acid, ethyl phenylmethyl  
 ester 6410-56-6, Dipropyl methyl phosphonate 7526-26-3, Diphenyl  
 methyl phosphonate 7664-38-2, Phosphoric acid, uses 7748-09-6,  
 Diallyl phosphate 7757-79-1, Potassium nitrate, uses 10124-37-5,  
 Calcium nitrate 10377-60-3, Magnesium nitrate 10497-05-9,  
 Tris(trimethylsilyl)phosphate 13598-36-2, Phosphorous acid, uses  
 15022-08-9, Diallyl carbonate 15285-42-4, Benzyl nitrate  
 17176-77-1, Dibenzyl phosphonate 18306-29-1,  
 Bis(trimethylsilyl)sulfate 18495-74-4, Dibenzyl sulfate  
 19236-58-9, Dibenzyl methyl phosphonate 24424-99-5, Di-tert-butyl  
 dicarbonate 27991-93-1, Sulfuric acid, Bis(4-nitrophenyl) ester,  
 uses 28519-15-5, Phosphoric acid, dibutyl phenylmethyl ester  
 31139-36-3, Dibenzyl dicarbonate 32636-65-0, Phosphoric acid,  
 diphenylmethyl diethyl ester 34207-39-1, Nitrous acid, phenyl  
 ester 54963-39-2, Phosphonic acid, (diphenylmethyl)-, dimethyl  
 ester 57772-64-2 59577-32-1 66065-85-8, Succinimidyl-2,2,2-  
 trichloroethyl carbonate 66085-82-3, Dicarbonic acid, methylphenyl  
 ester 66186-16-1, Didecyl sulfate 66735-55-5, Methyl Phenyl  
 sulfate 72101-14-5, Phosphoric acid, Dimethyl methylphenyl ester  
 74124-79-1 104184-81-8, Sulfuric acid, 2-chloroethyl ethyl ester  
 115491-93-5, Diallyl dicarbonate 116977-36-7, Dicarbonic acid,  
 ethyl 2-propenyl ester 246140-06-7, Dicarbonic acid, methyl  
 phenylmethyl ester 246140-07-8, Dicarbonic acid, phenylmethyl  
 propyl ester 246140-10-3, Dicarbonic acid, butyl phenylmethyl  
 ester 246140-17-0, Dicarbonic acid, mono-2-propenyl ester  
 246140-18-1, Dicarbonic acid, 2-propenyl propyl ester 246140-20-5,  
 Dicarbonic acid, mono-methyl ester 246140-22-7, Dicarbonic acid,  
 mono-ethyl ester 246140-24-9, Dicarbonic acid, mono-propyl ester  
 246140-26-1, Dicarbonic acid, mono-butyl ester 246140-27-2,  
 Dicarbonic acid, cyanomethyl methyl ester 246140-29-4, Dicarbonic  
 acid, methyl nitromethyl ester 269402-58-6 269402-59-7  
 269402-60-0

(alkali metal **battery** having improved cathode activated  
 with **nonaq. electrolyte** having passivation  
 inhibitor additive)

IT 534-16-7, Silver carbonate 563-63-3, Silver acetate 1314-62-1,  
 Vanadium pentoxide, reactions 7440-22-4, Silver, reactions  
 7761-88-8, Silver nitrate, reactions 7783-99-5, Silver nitrite  
 20667-12-3, Silver oxide  $ag_2o$

(alkali metal **battery** having improved cathode activated  
 with **nonaq. electrolyte** having passivation  
 inhibitor additive)

IT 7440-37-1, Argon, uses 7440-59-7, Helium, uses 7727-37-9,  
 Nitrogen, uses 7782-44-7, Oxygen, uses

(alkali metal **battery** having improved cathode activated  
 with **nonaq. electrolyte** having passivation  
 inhibitor additive)

L39 ANSWER 6 OF 6 HCA COPYRIGHT 2002 ACS

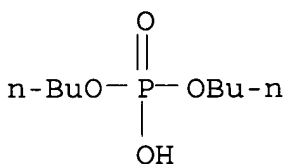
130:340670 Phosphate additives for **nonaqueous electrolyte** in alkali metal **electrochemical cells**. Gan, Hong; Takeuchi, Esther S. (Wilson Greatbatch Ltd., USA). Eur. Pat. Appl. EP 918364 A1 19990526, 28 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 1998-308674 19981023. PRIORITY: US 1997-974305 19971119.

AB An alkali metal, solid cathode, **nonaq. electrochem. cell** capable of delivering high current pulses, rapidly recovering its open circuit voltage and having high current capacity, is disclosed. The stated benefits are realized by the addn. of at least one phosphate additive to an **electrolyte** comprising an alkali metal salt dissolved in a mixt. of a low viscosity solvent and a high permittivity solvent. A preferred solvent mixt. includes propylene carbonate, dimethoxyethane and an alkyl phosphate additive.

IT 107-66-4, Dibutyl phosphate 598-02-7, Diethyl phosphate 701-64-4, Monophenyl phosphate 812-00-0, Monomethyl phosphate 813-78-5, Dimethyl phosphate 838-85-7, Diphenyl phosphate 1623-06-9, Monopropyl phosphate 1623-14-9, Monoethyl phosphate 1623-15-0, Monobutyl phosphate 1804-93-9, Dipropyl phosphate (phosphate additives for **nonaq. electrolyte** in alkali metal **electrochem. cells**)

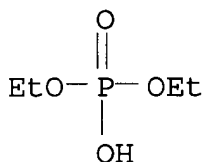
RN 107-66-4 HCA

CN Phosphoric acid, dibutyl ester (8CI, 9CI) (CA INDEX NAME)



RN 598-02-7 HCA

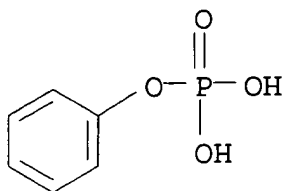
CN Phosphoric acid, diethyl ester (8CI, 9CI) (CA INDEX NAME)



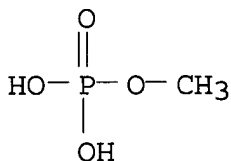
RN 701-64-4 HCA

CN Phosphoric acid, monophenyl ester (8CI, 9CI) (CA INDEX NAME)

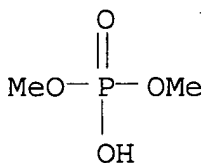




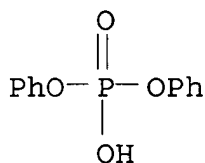
RN 812-00-0 HCA  
 CN Phosphoric acid, monomethyl ester (8CI, 9CI) (CA INDEX NAME)



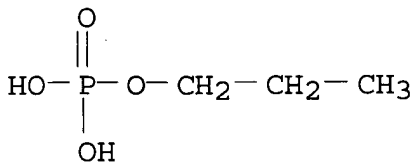
RN 813-78-5 HCA  
 CN Phosphoric acid, dimethyl ester (8CI, 9CI) (CA INDEX NAME)



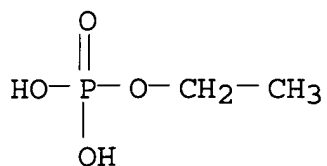
RN 838-85-7 HCA  
 CN Phosphoric acid, diphenyl ester (8CI, 9CI) (CA INDEX NAME)



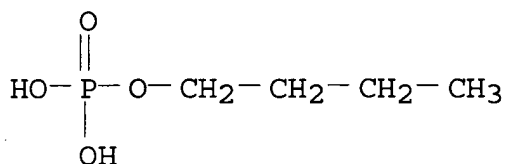
RN 1623-06-9 HCA  
 CN Phosphoric acid, monoethyl ester (7CI, 8CI, 9CI) (CA INDEX NAME)



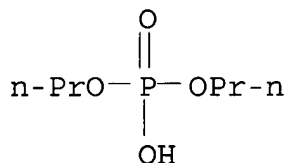
RN 1623-14-9 HCA  
 CN Phosphoric acid, monoethyl ester (8CI, 9CI) (CA INDEX NAME)



RN 1623-15-0 HCA  
 CN Phosphoric acid, monobutyl ester (8CI, 9CI) (CA INDEX NAME)



RN 1804-93-9 HCA  
 CN Phosphoric acid, dipropyl ester (8CI, 9CI) (CA INDEX NAME)



IC ICM H01M010-40  
 ICS H01M010-44  
 CC **52-2** (Electrochemical, Radiational, and Thermal Energy Technology)  
 ST **battery electrolyte** phosphate additive  
 IT Fluoropolymers, uses  
 (binder; phosphate additives for **nonaq. electrolyte** in alkali metal **electrochem. cells**)  
 IT Primary **batteries**  
 (lithium; phosphate additives for **nonaq. electrolyte** in alkali metal **electrochem. cells**)  
 IT **Battery electrolytes**  
 (phosphate additives for **nonaq. electrolyte** in alkali metal **electrochem. cells**)  
 IT Carbon black, uses  
 (phosphate additives for **nonaq. electrolyte** in alkali metal **electrochem. cells**)  
 IT 1313-13-9, Manganese dioxide, uses 7439-93-2, Lithium, uses 11099-02-8, Nickel oxide 11104-61-3, Cobalt oxide 11105-02-5, Silver vanadium oxide 11115-78-9, Copper sulfide 11126-12-8, Iron sulfide 12039-13-3, Titanium disulfide 12068-85-8, Iron disulfide 12789-09-2, Copper vanadium oxide 12798-95-7  
 181183-66-4, Copper Silver vanadium oxide

(phosphate additives for **nonaq. electrolyte**  
in alkali metal **electrochem. cells**)

IT 67-68-5, DmsO, uses 68-12-2, Dmf, uses 75-05-8, Acetonitrile,  
uses 79-20-9, Methyl acetate 96-48-0, .gamma.-Butyrolactone  
96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate  
108-32-7, Propylene carbonate 109-99-9, Thf, uses 110-71-4,  
1,2-Dimethoxyethane 111-96-6, Diglyme 112-49-2, Triglyme  
127-19-5, Dimethyl acetamide 143-24-8, Tetraglyme 556-65-0,  
Lithium thiocyanate 616-38-6, Dimethyl carbonate 623-53-0, Ethyl  
methyl carbonate 623-96-1, Dipropyl carbonate 872-50-4,  
n-Methylpyrrolidone, uses 2923-20-8, Ethanesulfonic acid,  
pentafluoro-, lithium salt 4437-85-8, Butylene carbonate  
5137-45-1, 1-Ethoxy, 2-methoxyethane 7791-03-9, Lithium  
perchlorate 13453-75-3, Lithium fluorosulfate 14024-11-4,  
Lithium tetrachloroaluminate 14283-07-9, Lithium tetrafluoroborate  
14485-20-2, Lithium tetraphenylborate 15955-98-3, Lithium  
tetrachlorogallate 18424-17-4, Lithium hexafluoroantimonate  
21324-40-3, Lithium hexafluorophosphate 29935-35-1, Lithium  
hexafluoroarsenate 33454-82-9, Lithium trifluoromethanesulfonate  
35363-40-7, Ethyl propyl carbonate 56525-42-9, Methyl propyl  
carbonate 90076-65-6, Lithium bis(trifluoromethanesulfonyl)imide  
114691-03-1 115028-88-1 132404-42-3

(phosphate additives for **nonaq. electrolyte**  
in alkali metal **electrochem. cells**)

IT 107-66-4, Dibutyl phosphate 598-02-7, Diethyl  
phosphate 701-64-4, Monophenyl phosphate 812-00-0  
, Monomethyl phosphate 813-78-5, Dimethyl phosphate  
838-85-7, Diphenyl phosphate 884-90-2, Phosphoric acid,  
diethyl phenylmethyl ester 1623-06-9, Monopropyl phosphate  
1623-08-1, Dibenzyl phosphate 1623-14-9, Monoethyl  
phosphate 1623-15-0, Monobutyl phosphate 1707-92-2,  
Tribenzyl phosphate 1804-93-9, Dipropyl phosphate  
3066-75-9, Phosphoric acid, diethyl 2-propenyl ester 7429-90-5,  
Aluminum, uses 7440-02-0, Nickel, uses 7440-32-6, Titanium, uses  
7440-44-0, Carbon, uses 7748-09-6, Diallyl phosphate 7782-42-5,  
Graphite, uses 10497-05-9, Tris(trimethylsilyl)phosphate  
12597-68-1, Stainless steel, uses 28519-15-5, Phosphoric acid,  
benzyl Dibutyl ester 32636-65-0 66325-71-1 67293-73-6,  
Phosphoric acid, dimethyl phenylmethyl ester

(phosphate additives for **nonaq. electrolyte**  
in alkali metal **electrochem. cells**)

09/762,220

	Type	L #	Hits	Search Text	DBs	Time Stamp	Comments	Errors
1	BRS	L22	356	H01M\$8 and ((electrode anode cathode) with phosphate)	EPO; JPO; DERW ENT	2002/12/14 21:14		0
2	BRS	L21	223	429/\$.ccls. and ((electrode anode cathode) with phosphate)	USPAT; US-P GPUB	2002/12/14 21:14		0